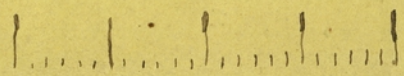

No. 11.

Field-Book of Willis L. Jepson.

- 1903 -

If lost, finder please return to P.O. Box 103, Berkeley, California, and receive reward.

Berkeley to Santa Cruz, July 13, '03

– The Redwoods (and Tan Oak also acc. to Raymond, '87) come down to Alma. Even above Alma and nearly as far as Wright's one sees the Sycamore in the bottom of the cañon. From the car window I also noticed Populus trichocarpa; it recurred (and in fine large specimens) in the cañon on the western slope. The Yellow Pine, in rather good specimens, is by the railroad at one of the stations near the summit. Also observed Maul Oak in the same general locality.

Observed considerable Tan Oak, shrub form, in the Redwood Region, on western slope. In the lower zone there was a pure formation of "Blue-blossom" – possibly several species involved.

Santa Cruz

-The Kron Tanning Co. has its plant (San Lorenzo Tannery) in a little vale on the Powder Mill Road. Everything about the place is exceedingly clean and well-kept. This tannery was also involved in the recent strikes.

Mr. Kron says that second-growth bark rarely runs to 14 o/o and that it does not make as good leather as first-growth bark. The second-growth is very rapid and the bark becomes very thick in a little while (15 years) - the bark thickens right up and becomes as thick as the wood diameter. Its characteristics are: its smoothness both on outside and inside, its lack of fibre (particularly on the inside which is especially noticeable in the case of ordinary

July 13, 1903.

bark), and its brittleness and pale color. Ordinary bark or first-cutting bark is richest at the foot of the tree. And the richest portion of the bark is that nearest the rind or rather epidermis. When this is weak in tannin it is because fibre has burned the tannin out. This portion of the bark is called "ross" and its thickness is dependant upon the character of the fire. We peel down to the roots and do not take off the first rim until the tree is down. Then we peel downwards. They are very wasteful in the northern woods and sometimes leave as much as 120 pounds of bark about the foot of a tree and this is the very best bark.

Santa Cruz

The second-growth comes very quickly and would come more quickly if fires were kept away from it, and it were thinned out and only three or four sprouts allowed to grow. – So much says Kron.

This would ensure an inexhaustible supply of tanbark. Live Oak can be used but only mixed with Tan Oak bark. When used alone it makes a poor leather. There are certain residues and gums which close up the pores; the leather is tanned on the outside but not on the inside. Some of my 160's in Monterey Co will run very high on yield – one as high as 1200. I will let you know the yield (Tan Oak) when I peel it next season. An acre will peel, sometimes, as much as 50 cords

July 13, 1903.

– Old Redwood stumps vats to be seen at Big Trees; used by a Frenchman who tanned calf-skins in the 50's; don't know why he went away up there in the Redwoods – H. F. Kron.

– Redwood fire-hollows often filled up with a great pile of sticks – rats nests – bad in case of another fire.

– Lilac, as they call it here, Ceanothus thyrsiflorus and allies covering the whole of the deforested Redwood country. Kron thinks it chokes out second-growth Redwood etc; Guardian of the Redwood Park thinks it affords a shelter for the young shoots of the Redwood which grow straight into the air.

California Redwood Park

- On the way to Big Basin We passed a great deal of second-growth Redwood, 50 ft. high and 25 years old, about. Higher up (near Felton they are sawing 2d growth Redwood. At Boulder Creek I noticed piles of lumber in which the white sapwood was conspicuous in the planks! But in the north the sap is rigidly rejected in sawing the log. However they won't be so particular up there after a little.

- In some S.F. daily of the last few days (yesterdays Call, I think) there is an account by telegraph of a new process discovered by an Englishman by which inferior woods can be rendered very tough, strong and durable.

July 14, 1903.

- California Powder Co. plant (2) mi. up San Lorenzo River from Santa Cruz. The buildings occupy a little valley or flat in the cañon which is well covered with trees. The trees help to separate the buildings and prevent fire from one to another in case of an explosion. For charcoal they use chiefly Madrona. Indeed most of the virgin bodies of Madrone in these mountains have been cut out for this purpose and they are now using mainly second-growth. The charcoal from this tree is a superior charcoal for the uses of the Powder Co.

California Redwood Park,

Big Basin.

- During the long drought in the Smith Coast Ranges the cattlemen had resort to the oaks to save their cattle. About Jolon and in other places young or the smaller Live Oak trees were cut down or branches from the larger trees were cut off, for the cattle to browse on. — Acc. to Park guardian and Mr. Kron.

- The trees, here are Live Oak, Redwood, Tan Oak, Wax Myrtle**, Cranberry, Alder, Douglas Spruce, Azalea*, Burning Bush[1]

- The forest floor plantcare characteristic of the Redwood Region: Oxalis Oregana, Trientalis, Campanula prenanthoides, Adenocaulon bicolor

* Rhod. occidentale.
** Myrica californica.

1. = Euonymus occidentalis Nutt.

July 14, 1903.

Redwood:

- Big trees - 43', 7½" at 7 ft
61' 3½ at ground

The above was the first large tree we came to, after leaving central camp in Big Basin - 200 yds.

— Very large tree, 51' 7", at 7 ft. from general level of forest; around edges of stump 86' 8". These trees are 225'-250 ft. h.

- Wax Myrtle, trees 25 ft. high, in flats of cañon, trunks smooth & whitish, the older trunks with shallow short and rather broad fissures which on old trunks in forest shade lend a somewhat singular appearance. = Myrica californica.

California Redwood Park

– There is no more bark tanned upper leathers; no one wears a calf skin any more tanned by any vegetable tanning process. All the kids, calfs and viels are chrome tans – bichromate of potash – large natural deposits in nits near Ukiah – and we have bark tans only for soles, harness leather, etc. The chrome tan is a quick tan, 5 days to prepare the skin, and about 2 days for tanning and getting ready for the market. The Napa people were the first people in the U.S. to tan sheepskins so as to make them equivalent to a buckskin. Mr. Kron referred laughingly to this method as the soapsud tanning – so exceedingly simple

July 14, 1903.

is it. Tan a sheepskin with bark & it is brittle; the soapsud tan makes a skin which is very tough and excellent in other ways. Skins which had been selling for $3.00 now sold for $9.00 & $12.00 and these people cleared up (2 million) dollars by the process. All the recent so-called buckskin gloves are really sheepskins.

A man does not need to be a tanner to tan by that process – he wants to be a chemist and a mechanic.

– Black Redwood is exceedingly dense and black as black rosewood – "never rots" in contact with ground – Kron selects it for his rats – they have lasted 30 years. Black Redwood is of the base of the log and such

California Redwood Park

logs are called "sinkers" in the mill pond on account of their weight. – There are 4 lime-kilns in the region traversed this morning & they use Redwood!! for fuel or mostly that. / hires Italians to cut the wood. Pays them $6 a cord (4 ft. stiff). Sec. contract they must cut also all the brush & pile it in windrows up & down the hill. The cordwood is between the windrows but before the firing the logs are merely sawn into 4-ft. lengths or not touched at all. The windrows are burned and of course the fire spreads out between the windrows but it does not injure the logs scarcely or at all because they are still green. After the wood is

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taken out by ox-teams the land is pretty well cleared! with fire & axe. When the tender stump-sprouts come up a herd of goats are turned in – Vindictive – but even goats won't eat Blue Blossom and this grows apace, forming a cover for Redwood & other things to follow. – Guardian of the Park.

– The Park Guardian is preparing to utilize some of the down timber & the tanbark. A road which is being built necessitates clearing. Redwood logs fallen across the "right of way", which have been in this position for 100 years or perhaps 200, are still sound, albeit badly fire-injured sometimes, but are being sawn into 7-ft. lengths and split-

California Redwood Park

into fence-posts. Tan Oak trees which it is necessary to take out are peeled and the bark saved. Doubtless much firewood can be saved. Developments along this line should eventually result in the Park being in a measure self-supporting.

- Kron speaks of the loss in sawing Redwood being due largely to wind-shakes - that Pine would saw many more thousand.

- Redwood stumps were left high because in felling with an axe the lower portion of the stump is burly & will not chip, as is necessary when cutting with an axe. The saw method has changed all that.

- Kron was raised in Capell Valley, Napa Co., on a stock ranch, went to the Napa Schools and joined

July 14, 1903.

his father in the business at Santa Cruz which the elder Kron began there in 1866.

- They cleared Laurel from the land at Peppermood in order to raise hay! And it is a fine wood for finishing and is valued in shipbuilding. But some people have a queer way of doing business, says Kron. When a naval officer went to Peppermood at the time of the Spanish War, for Laurel, the people thought the Laurel was valuable and asked $75. or ten M! Of course negotiations stopped and yet they had been burning it to get rid of it!

- Kron says Tan Oak was originally called Laurel Oak and he still prefers the name to Chestnut Oak as our tree is not like the Chestnut Oak of

California Redwood Park

the Eastern U.S. of which they use both the bark & the wood for tanning — In a certain cañon, I forgot which, of the Santa Lucia Range the bark from the trees in the bottom is very smooth and very poor in tannin, says Kron, but such is not always the case. Kron gets out of the Santa Lucias (3000) cords of bark this year. His estimate of standing bark in the Santa Lucias is 20,000 cords — that is his maximum. At first he said 10,000 then thought a moment and decided on the former ~~Latter~~ figure.

— Rogue River is a rich bark county. The Franks have interests there. I do not remember Kron's estimate for that region, if indeed he

July 14, 1903.

made one, but I inferred that there was quite as much as in the Santa Lucias altho' it would not run but 14 o/o in tannin.

— The Mckee Boys have made sets of furniture out of the native woods, and have been very successful in getting good effects. They put their Tan Oak logs in the Matole and let them lie there all winter. — The Mckee's belong to the coast near Shelter Cove.

— The guardian of the Park is a classmate of Pardee, altho' he did not finish his course. He is an active alert fellow, genial and obliging. He "fired" a workman, who went out with his blankets by the lower trail, asking the guardian if he would bring his trunk down in his buggy. Pilkington said he would, not remembering the 1½ miles of trail at the moment. Kron and I helped him carry the trunk out over the mountains!!

California Redwood Park

- The Tanbark yield of Santa Cruz County has been 240,000 cords. This includes Santa Clara side of the mountains.

- San Mateo County has yielded 31,000 cords. Frank Bros. have taken 25,000 cords and Beeger 6000 cords. Carl Beeger is an expert tannic chemist and is a man worth seeing. Kron says for me to use his name.

- The valuation of the above may be figured at $13.00 per cord, this is a fair average figure. - Kron.

July 14, 1903.

- There are 200,000 cords still in the whole Santa Cruz Mountain district. - Kron.

- Plenty Tan Oak seedlings noted near main camp in forest.

- Trientalis - 3-5-leaved commonly. The sixth leaf, so often present, is commonly minute.

- S.P. Taylor made Manilla paper on Paper Mill Creek, Marin Co. He did not use wood pulp of any sort. His sons ruined the business by extravagance. The straw paper of the butcher shops was made at Corallitos from wheat & barley straw; now by the same firm at Lebanon in the Willamette Valley where they have water power. The firm made great money at Corallitos and as a result established

California Redwood Bark

the northern paper plant. A Scotch firm of brothers made sized card board by a trade-secret. One brother had a tendency to get drunk and a man attempted to get the secret away from him. He offered him £5-000. The brother said he would sell. The man got him under the influence of liquor but of course did not dare let the other brothers know what he was about. The money was paid, the brother gave the man the "secret" but it proved, after losing much money, not to be genuine! The drunken brother was not such a fool after all and gave the man what is now termed a "Gold brick"! - Kron

July 14, 1903.

- Everett Paper and Pulp Co, on the Sound in Washington. Kron Co. are the agents for certain territory. Mr. Kron desires to give me a letter to them if I ever go north. He says they use Cottonwood wood for pulp and as it sprouts rapidly they consider they have an inexhaustible supply.

- The methods of tanning by means of the California Tan Oak bark have been developed in California and all the tanners follow essentially the same principles. The method is in a way a reversal of Eastern methods, that is after the Eastern tanner gets his hides out of the lime-vats and get the lime out

California Redwood Bark

he never lets the hide get near the lime again. But the California at a certain stage put his hides back in the lime - a weak solution. This has reference to making weight on the hides, if I remember Krom, fixing them so that they will absorb tannin. There are certain effects of the California tanbark which on the leather it is necessary to offset by gambier. All Calif. tanners use this. There is practically no variation among California tanners as to method of tannage. But the results vary owing to greater or less care and skill. Also varies on account of such a local factor as water. For instance Eberhard has (quality of) an artesian well which furnishes

July 14, 1903

his tannage water. On account of this water his hides vary somewhat from hides tanned at other places, or rather this is one factor in a possible variation. Eberhard excels in "skirtings", no other Calif. tanner can equal him in leather of this sort. This is partly due to his artesian water, perhaps the leading cause. But he does not equal Kullman Salz & Co., Wagner or Krom, in sole leathers, etc, altho he makes good leathers. California tanners have quit experimenting with other tannage agents than California Live Oak bark. As a rule they have lost by it or got into difficulties. Krom says there is a great temptation to experiment with new things but his rule now is to stick to

Santa Cruz

oak bark - i.e. the California bark, and this is the general determination among California tanners now that the extent of virgin Tan Oak is known. Eastern tanners do better work in the matter of salting [and curing] hides. They are far more careful and painstaking, but the California tanner beats out because the Tan Oak is better than the Hemlock.

Kron has used Willow bark - one of the native willows - but only a little of it - made a light-colored leather.

- Ceanothus thyrsiflorus is simply "Lilac" in this region.

July 15, 1903.

- Peterson cut 75 cords of 2d. growth 15 years old, took 5 or 10 cords more than first cutting! Kron vouches for this. The cutting was on a ridge, (15 or 20 A)

- A. E. Bassett, Loma Prieta Lumber Co., cut-over areas 15 years old now. Mills Bldg, S.F., - this man can give explicit information about ages of 2d growth Tan Oak and Redwood. Their properties have not been burned over since the beginning, if I remember Kron aright - and there is a fire lane maintained around their property.

He believes, says Kron, that Lilac chokes out the Tan Oak but that the Redwood can take care of itself. This would be my opinion.

Santa Cruz

- Visited the office of Dr. C. L. Anderson this morning but did not find him in. His outer office has in it a botanical case with glass doors. The interior is book-shelf like and the specimens of plants are in volumes or books, the name of the family on the back with the contained genera. The plants are apparently in double layer sheets. There are other natural history evidences, such as botanical pamphlets, a sketch of ancient ruins in the Santa Cruz Mts. etc. The inner office is filled up with medical books.

July 15, 1903.

- Porousness of Tan Oak wood, makes it useless for staves for barrels for the reason that part of the stave is planted across the grain, the ends of the pores are cut and the liquid runs out! It is a very porous wood, indeed. Any oak is hard to season, and we are not yet patient & painstaking enough yet in California to season Tan Oak properly, but the best way to dry any wood is to throw it in water!!!

- Loma Prieta, is the Spanish for Black Mountain. It is a fine landmark from Santa Cruz. At any time of the day, morning or evening, storm or shine, Loma Prieta is always black says Kron and he view with great anxiety the proposition to put it Mount Bache on the government

Santa Cruz

maps. He thinks this has already been done.

- Kron says the Chinese no longer use Tan Oak wood - they now get oil so cheaply.

- Marin Co., Tamalpais district has a considerable Tan Oak acreage - never been touched, altho so near S.F. Say 10,000 cords. It is to be hoped that it never will be slashed. The city of San Francisco is exceedingly fortunate in having such a large area of unspoiled mountain country so near it.

July 15, 1903.

- Rotting of sapwood of Redwood and borers in it - Big Basin Park - but the rotting and the borers stopped short at the heartwood!

Santa Cruz, San Vicente Landing to Big

- Big Creek Power Co. ships lime and 4 ft. Tan Oak cordwood from San Jacinto landing. The lime goes in barrels made of redwood with hazel hoops. The hoops come mostly from Oregon.
- The barrels are made at the Santa Cruz Lime Co's Kiln. The coopers received 8c per bbl a short time ago; they now receive 10c. A good man makes 30 to 35 bbls per day - a poor cooper 25 bbls. The rock is burned a few ~~feet~~ yards away from the cooper shop.
- Second-growth Tan Oak, very straight trunks, bark very smooth and beginning to arrive at that age when a few ~~large~~ deep long fissures run down the trunk.
- Douglas Spruce trunk bark very variable - here in deep

Basin, July 16, 1903.

woods it is a genuine brown or chocolate, almost the color of the air-dried broken surface of 2d growth Tan Oak. Often it is like Birch - so mottled. Alder trees and Tan Oak trees in Big Basin, in one place, were hard to distinguish - not by examination, but simply by standing beneath them and looking at the bark & foliage. These trees were mixed up and touching each other. ~~Winter-halter~~ Pilkington and I had an argument as to which was which but of course we soon settled it.

San Vicente Creek

- Trunk of Tan Oak, probably 2d-growth, 5 5/12 in. diam. at 14 in. (inside bark) has bark 1/1 1/4 in. diam. Marvelously thick bark for so small a tree. The bark is very smooth, pale & brittle; has all the characteristics of 2d growth bark.

- The Italian foreman says this region here was peeled between 30 & 40 yrs. ago; a "Frenchmen living up the ridge told him". Below the trail they did not peel then; too steep; used axes then and took it where it was easy to get at.

- Second-growth bark not only smoother but not so mottled as smooth 1st growth may be

July 16, 1903.

- They peel very close at this place, peeling 2d growth very fine, down to 1/6 in. To see them peeling limbs etc. is for the mind to invite a contrast with the Mendocino-Humboldt methods where they peel big trees up to the first limb and let her go at that. The peeling here is so close that the tanners in some cases have graded the bark into 3 grades before accepting it. Thin bark is so light that it does not mean much in weight to the peeler nor in tannic acid to the tanner.

- Snow and wind are enemies of Tan Oak says Lilly, and Tom also remarked the damages from snow. Snow seldom comes in this region, but when it does the trees

San Vicente Creek

comes down in quantity and the loss is great.

- Kron thinks that lands coming up with 2d growth Tan Oak good investments financially.

- Redwood, 2d growth, mill here 30 yrs ago or a little more, tree 87 ft. high, 29 years (rings at 2 ft) 16 in. diam inside bark at 2 ft. 8 1/2 in. diam at 44 ft.

- Big Tan Oak — 18 ft. 4 in. at 2 ft on lower side + 3 ft on upper. Forks at 25 ft. into several great arms. 25 to Height = 110 ft; 6 rings. (The trees do not average nearly so large in this region as in Humboldt but individual trees are quite as large if not larger.). This big tree will yield comp. Mr. Winterhalter, 3 1/2 cords 1' fork - at $16.00 per

July 17, 1903.

cord which is the price this year in Santa Cruz, this tree is worth from the stand point of the Tanbark man, $56.00, leaving the wood out of consideration.

- Red ends of Tan Oak cordwood very noticeable. Lilly says that if the peeled logs be permitted to lie for a year or so before conversion into cordwood (chs. cordwood) it is white and has not "the life" which the red-tinted wood has.

- Big logs of Tan Oak left in the forest often check very badly - sometimes you can stick your hand into the check.

San Vicente Creek

- "A hot dry summer closes down the peeling season early; cool weather prolongs the peeling season particularly if the spring be late and rainy."
- George Winterhalter.

The peeling is good when it is very hot - but then this is because growth is rapid and the cambium is active - good peeling of this sort is at the expense of a longer season.

July 17, 1903.

- I see no Garry Oak, no Black Oak and no Yellow Pine. There is very fair Madrona on the main ridges between the creeks, San Vicente, Big Creek and Little Creek. I took a walk with George Winterhalter from the Lime Kiln to the headwaters of Big Creek, going over into the Big Creek basin a short distance. There were fine trees of Douglas Spruce, Tan Oak, and in the small open near the summit - Quercus agrifolia. All along this ridge were a good many cabins, permanent camps that were "homes" to the people living there. There were, too, Japanese camps, the men being engaged in cutting

San Vicente Creek

cordwood. We stopped for lunch at a white man's place and I ate heartily of the rough food. The meat, a boiled beef-piece, was good, the bread was fair but the other dishes I mostly passed. The yellow-jackets swarmed over the meat but no one paid any attention to them and they harmed no one. These people are in a way very interesting really — they are in most particulars so shiftless. We plunged into the forest and worked through a fine Tan Oak country. I was amazed at the amount of young growth beneath the forest. This was often wholly Tan Oak 2 to 4 ft. high and the thickness of the bark on these little

Cont. 4 p. ahead

July 17, 1903

- The
- The Santa Cruz Lime Co will utilize the waste of its lumber mills for the Kilns when the mills get a going. The waste in a California Lumber Mill has been and is still a standing wonder. The refuse pile burns nights and days and Sundays. George Winterhalter who has worked in the Scotia woods say that the foreman would often come along and have a log thrown out: "Throw that log out" and it would be rolled aside, even after it had been cut into lengths. Because it was not soft enough. It was "burly" or knotty. The Lumber Men need to take a lesson from

Santa Cruz

the cattle slaughterers and packers. They make use of the hoofs nowadays and use the bones for fertilizers. And as for the pork-packers! Think of Armour and of Swift. They utilize everything except the squeal. None of the hog gets away from them. And the lumber mill man should not allow enough waste to get away to make an Indian a cabin.

July 15, 1903.

[- The California Door Co. has a system of suction pipes by which the shavings and wood dust of all kinds is gathered right up from the knives, planers and saws and carried to the fire-room where it furnishes fuel. A planing mill is now-a-days a clean sweet place and there is the further satisfaction that a portion of the waste is utilized. The Union Lumber Co's planing mill is also fitted in the same way.
- Berkeley]

Santa Cruz

No. 2256. Box Elder. San Lorenzo River Bridge, in city of Santa Cruz, but I have no reason to think it not spontaneous = Acer negundo L. var. californicum Sarg.

Cont. from 4 p. back (p. 40)

trees was remarkable. The bark was often thicker than the wood a good deal. As usual in the redwood region the brush tangle becomes so thick that it is difficult to get through. Not so the Tan Oak but the Vaccinium ovatum - ah, that is a thicket I tell you. However one can avoid it in one way. It is usually possible to get down and crawl under between the more or less open stems and avoid the interlacing

July 18, 1903.

- Joseph L. Majors, came to California from Tenn. in 1834 and established the first tannery and flour mill in 1840. - S.F. Chronicle, July 21, 03 - See clippings file.

Cont. from prev. page.

above. This we did - and considerable of it we did.

- Winter buds of Pinus coulteri "enormous"! - as much as 4 in. long just before bursting. Leaves 11 in. long. Foliage blue-gray-green. Buds all vertical, the ends of the drooping branches turning up in such fashion that they are parrot-hook-like. - Apr. 7, '03

Berkeley

– Visited the Furniture Factory at West Berkeley today. Corbin is a chief man. Stair showed us about. They use chiefly wood from a 42½ tract which they own in S.W. Oregon: "Tan Oak", "Oregon White Oak" (Quercus Garryana), "Laurel", & "Oregon Maple". Tan Oak shrinks in seasons unevenly in the kiln house. This boded ill, but Stair said that after being planed it was all right. The shrinkage was in little spots or depressions on a board. It was noticeable in planing. The oak works up most beautifully into bedroom sets. I was not prepared to find the trial of it so successful. Stair says it carves easier than the Eastern Oak and does not

July 25, 1903.

check as badly after kiln-drying. All the ornamental work in carvings on the heads of their beds, etc are made from the Tan Oak. Usually the panels are made of Eastern Oak but they use the Tan Oak for the posts, and everything else. The flake in it is quite as good as the Eastern Oak often and in some cases was very beautiful indeed. The trees are, of course, cut for wood and not for bark. Stair says the wood is worth 4–5 times as much as the bark at prevailing prices.

The most beautiful thing they had there was made of Laurel. In the rough the wood mostly gray or dark

Berkeley

or brown (planed) but when polished the grain and wave and figures came out exquisitely. It seemed to me that I had never seen a more beautiful woods. I could not have imagined it without seeing it. The ripples and broad figures were truly fine. It should certainly be cut into veneers and made to go further. I was interested to learn that a wood must be veneered on both sides, to equalize the strain otherwise the warp would spoil the piece. It is an exceedingly rough-looking lot of stuff that they begin work

July 25, 1903.

on. Stair says Tan Oak needs but one coat of varnish, while Eastern Oak needs two. He emphasized its fine close grain. Laurel has certain feature which will enable it to be worked up with mahogany in veneering. The former can be passed off for the latter when treated, they intimate. They also have an "Oregon Cottonwood", doubtless Populus trichocarpa, which they use for the backs of drawers, etc.

San Jacinto Mountain

- Mr. Ford of Redlands says that on his mountain ranch are Black Oak, Maul Oak and Engelmann Oak. The names are my determinations from his descriptions. Black Oak suffers badly from Mistletoe; he loses 2 or 3 trees every year. He tried cutting off the parasite but it sprouted out again.

The two latter are useful for "single-trees", exceedingly strong. Engelmann Oak (a white oak he says) 100 ft. high often! This and Maul Oak "no better woods with us" - Ford.

July 28, 1903

- Dr. Ince, rector of an Episcopal Church in Los Angeles says that live oaks in Tejon Pass or near Ft. Tejon were badly injured by earthquakes in the 50's. The trees seemed as if twisted on their trunks and wrenched.

Moreover, some were snapped right off at the ground. See this he had from General Kirkham, long a resident of Oakland and Senior Warden of St. John's Church for 20 years, - who was in command of the troops at Ft. Tejon.

I query if more recent earthquakes have injured the native trees - such as the seismic disturbances at Vacaville, etc

Idyllwild, San Jac. Mt. 6000 ft.

- Sambucus glauca lasts well as post. Box Elder very well, Mountain Cedar very well; Black Oak not at all well if green only 4 or 5 years and if dried out not much longer.
- Coulter Pine occurs southward about Julian, San Diego Co. Asher says it is used in one of the mines near there for timbering - the Stonewall Mine, I think he said.

July 30, 1903.

- Pinus Pine - great pine for the Indians - low round-headed trees - producing cones abundantly and within reach of the Indian gatherers - the laziest could reach them. Ford has taken "4 or 5 gunnysacks full of cones from one tree - with as much more left. Fine to eat."
- Adenostoma sparsifolium - used as fuel, cut by Indians and Mexicans - burns well and needs no seasoning for the green wood burns first rate. - Asher
- Adenostoma fasciculatum, same bushes pour out a resin which can be used as a shellac! - Asher.

Idyllwild, Mt. San Jacinto.
(Strawberry Valley), 6000 ft.

No. 22 57. Adenostegia rigida Benth
Corolla dull white; lips close together, Corolla flattish & enlarged above the tube, somewhat spatulate. Filaments very hairy on lower side. Lower lip with purple yoke on inside — something like that.
Anthers 2-celled, one cell below the other. Bracts 3-forked, the forks very slender or the lateral 1-forked or unforked. Bracts expanded very slightly at the very tip, notched, the lobes turned in as if hooded.
Herbage sometimes and bracts usually purple-dotted.
Herbage sometimes purplish.
Top-root strong, yellow.

July 30, 1903.

— Rainfall 60 in. this year on Palomar Mtn. — Asher, Robt.

— [This trip to Mt. San Jacinto is for the purpose of giving a Summer School in Forestry. Dr. Lindley and others of Los Angeles brought pressure to bear on President Wheeler of the University and as a result Professor Steinbrunch and I are sent down here to give courses. The attendance is small and consists of people interested in the natural history of the mountain.] This note in brackets written May 24, 1929. It interests me now to notice that in 1903 and so on, my records in this book were confined to botanical matters relating to the Cal. flora. As to my experiences with A.V. Steinbrunch see (cont. p. 57).

Idyllwild, Mt. San Jacinto (Strawberry Valley) 6000 ft.

No. 2258. Pentstemon ternatus gray. Stems clustered, tall, 6 ft. h., woody, very straggly, with irregularly branched tops, the old flowering shoots dead and old branches dead, the flowering shoots arising from new parts. Flowers terra cotta. Bark fissured into long narrow thin pieces which fall away readily. Lower lip of 3 oblong lobes narrowed to an obtuse point; upper lip notched. Sterile stamen densely bearded along the whole upper side.

August 3, 1903.

– Yellow Pine, 25 years old and 25 ft. h. – favorably situated on moist flat near creek

– Coulter Pine, leaves on young trees, particularly in tops, persist 5 or 6 years. Also in Yellow Pines.

– [Cont. from p. 55.] my Private Journal (Men and Manners), p. 28,

Idyllwild (Spruce Cañon)

- Big-cone Spruces, 3 ft. thick, 75 to 90 ft. h. In same 40 are Libocedrus decurrens (2 ft. thick and 100 ft. high), Yellow Pine of about same dimensions as Libocedrus, Cottonwood, Sycamore (small trees), Black Oak, Maul Oak and scrub Wislizenii (?). All of these in cleft of cañon just below forks of road to Thomas Valley & Idyllwild. Also Pinus Coulteri on hillside near.
- Maul Oaks in the cañon just mentioned, with straight trunks of 35 ft., - where crowded by conifers. On open hillsides the trees branch close to the ground or at the ground. (1 ft.)

August 4, 1903.

- Big-cone Spruce, bark dark or black and fissured exactly like some Douglas Spruce. Leaves slightly curving or falcate - otherwise like Douglas Spruce.
- Maul Oak, why do I choose this name rather than other common names in use? Because the woodsmen who use Valparaiso Oak, Spanish Oak ~~and~~ or Pin Oak also admit freely or reluctantly - in nearly all cases - that Maul Oak is the same. That is they generally know what is meant by that term. It is, moreover, a ~~term~~ name which has significance to the worker in woods and certifies to its hardness and toughness.

Blind Cañon, San Jac. Mt.

- Coulter Pine on cañon side, 11 ft. diameter at 4 ft. A fine tree, 70 ft. There are many trees here and as I go along this mountain side 500-700 ft above the hotel I should say that nearly one-half the pines were Coulters, the other half being Yellow Pine - with a few Sugar Pines.
- We came in the course of the walk to a little meadow (60 ft. diam) in the hillside. It was a beautiful little spot with Lemon Lilies here and there, the flowers exhaling a delightful fragrance. Robt. Asher says he has found 23 on 1 stalk on Palomar. = Lilium parryi
- By this meadow, on the upper side, is, or was a fine circle of Maul Oaks, 6 in the circle, 4 overthrown by

August 5, 1903.

snow (doubtless), to 5 ft. high, one of the standing ones measuring 7 ft. at 3½ ft. These trees arose as stump sprouts from an old tree, the seed base of which is 8 ft. across.
- Robt. Asher, student in the U.C. Summer School of Forestry, is an eccentric genius of a second-rate order. He has tried Poetry as he calls it "doggerel", prose (both kinds being sent back by the magazines) and legendary lore of local origin. He has a humorous strain which breaks out suddenly & disappears as suddenly. He is also very modest but not bashful, and he is tremendously and sincerely in earnest which is a fine thing to see when it is about a subject worth while. He has been gathering bulbs and

Blind Cañon, San Jac. Mt.

Pine seed for sale. He is a correspondent of Purdy. He has contrived a legend named "Pumba Vine" to account for the Coronado Islands and Point Loma. Why Pumba said I when he had finished. - Well I called it Pumpkin Vine but Mother said that would never take with the Coronado Hotel people. So I looked through Bancroft's Indian vocabularies and found Pumba which means "head". He read my inquiring glance. Pumba, head, pumpkin, that is near enough for anybody!

Blind Canon - named by me, the first deep canon to right, going up Strawberry Valley from Hotel. The trail led well up and became blind.

August 5, 1903.

No. 2258a. Lotus oblongifolius Greene.
Banner large & broad, veiny at base; wings whitish; keel slightly yellowish. Stems from a root stock, propagating by runner-like rootstocks which are somewhat Stachys-like.
Strawberry Valley. By stream.

No. 2259. Composite
Rays 22 or less. Loose granitic soil. Strawberry valley.

No. 2260. Composite. Same as 2259.

No. 2261. Gilia leptalea " "

No. 2262. Erigeron greene foliosus Nutt. Granitic soil. Strawb. Val.

No. 2263. Ceanothus? leucodermis Greene ~~divaricatus Nutt.~~
Bark smooth, light-green; wood white! Common on driest slopes and elsewhere. Touch the fruits and they seem as if heavy with dew so thin is the outer coat.
8 & 9 ft. h. & pulpy Strawb. Valley.

Idyllwild, Mt. San Jac.
6000 ft.

No. 2264. Pinus lambertiana Dougl. Sugar Pine. Blind Canon Bark of young trees very white! & smooth.

No. 2265. Rhamnus Californica, Esch. cuspidata (gr.) wolf. Are the lateral veins more prominent & more numerous than in the shrubs at Berkeley? Hillsides.

No. 2266. Maul Oak. Under side of leaves lead-colored. Pollen fuzz on young leaves but these not always found. Better say "color of white lead" I do not think I have seen any trees with other than entire leaves in their tops.

No. 2267. Cryptantha. Loose granitic soil on edge of meadow described 4 pp. back. C. intermedia Greene.

No. 2268. From Maul Oak circle noted 4 pp back.

No. 2269. Phacelia. Same loc. 2267. See p. 71.

No. 2270. Stachys rigida Nutt. See p. 71.

August 5, 1903.

– The Rev. Dr. True is fond of telling Scotch stories. A Scotch barrister had a client whose water rights were involved. He examined the matter and decided that it was a good case but he lost the suit in two courts. So he appealed it – with Scotch persistence, to the highest court in the British Empire, the judicial committee of the Privy Council. The Queen's Chief Justice was a man who detested the Scotch accent. When the case was argued Clark the barrister had frequent occasion to use the word water, pronouncing it watter. At last the Chief Justice impatiently exclaimed: "Mr. Clark do you in Scotland spell water with two t's?" – Na, my Lord, Na! We dinna spell watter with two tays but we spell mainners with two n's"!

Clark won his case.

– Dr. True says this is Tennyson's conundrum. What is the difference between a maris stam and a nomans stam? History and herstam.

Dark Cañon, San Jac. Mt.

- Manzanita, never saw manzanita on that tree said Ford. However we saw a tree infested, on the Dark Cañon trip, and a second one. These are the only infested trees which I ever saw. Ford says that on his place he has mistletoe on Black Oak, Cottonwood, Sycamore, Buckeye. Even if cut away, either at the base by cutting off the limb the tree never does well after and seems permanently stunted. I was surprised at the amount of Manzanita which we saw on the Dark Cañon trip - it was the only oak and was quite frequent in occurrence - never saw it so abundant in any stretch of country in the north. Had equal thrifty clusters 65 ft. high.

Aug. 6, 1903.

- Sugar Pines & Yellow Pines, 4-5 ft through. Abundant Sugar Pine. Black Oak 4 ft through and 85 ft. high. Sugar Pines with long declined curving branches almost as long as the tree was tall. Saw very fine trees to be seen on this trip but the forest is thin as compared with the north - even in the best places.

- Mimulus cardinalis - Dark cañon
- Dogwood, north hillsides in forest.
- Azalea, abundant along streams, mostly 4 ft. h - a few 8 ft. high.

No. 2271. Azalea. Leaf rosettes at end of sterile branchlets. See note preceding. Latest Rhododendron occidentale Gray.

No. 2272. Azalea. "Leafy shoots from summit of stem. See note preced.

Dark Cañon, Mt. San Jac.

No. 2273. Ceanothus cordulatus Kell. Semi-oppressed, forming low hillocks or even trailing.

No. 2274. Adenostegia. Loose granitic soil under open pines. A. nevinii (Gray).

No. 2275. Rumex salicifolius Weinm. var. montigenitus Jepson. Edge of stream.

No. 2276. Lupinus cytisoides* = L. latifolius. Along streams or in wet spots. 4 ft. h.

No. 2277. Salix scouleriana Barr. Along brook in Dark Canon. Bushy, or straggling, 4-8 ft. h.

No. 2278. Rubus Nutkanus. Along stream = R. parviflorus Nutt.

* L. latifolius Agardh.

Riverside Co.

Aug. 6, 1903

- The Forestry Class (see p. 55 ante) rode to Dark Canon this afternoon - quite a cavalcade - all had good horses. The way led through old loggings at first, then for the most part we had virgin and some very fine trees. I was quite surprised. Along the stream in Dark Canon was Azalea, Lupinus cytisoides, Lemon Lily*, Mimulus cardinalis. Azalea occidentalis is in all moist places along streams, Lupinus cytisoides** is not limited to streams but is found on a moist spot on a dry hillside anywhere.

* Lilium parryi Wats

** = L. latifolius.

Idyllwild (Spruce Cañon)

The following were collected on the trip to Spruce Cañon – from the hotel to cañon below Thomas Valley forks. – Aug. 4, 1903.

No. 2279. Pseudotsuga macrocarpa Lemmon Big-cone Spruce.

No. 2280. L. latifolius var. Parishii Lupinus cytisoides. On south hillside.

No. 2281. Eriogonum ~~virgatum~~ molestum var. davidsonii. South slope, open brushy hill.

No. 2282. Eriogonum molestum var. davidsonii ~~Do~~. 2281.

No. 2283. ~~Chorizanthe~~ Oxytheca trilobata Gray. Open brush.

No. 2284. Adenostoma sparsifolium Torr.

No. 2285. Cotyledon Chalk Hill. Rocky steep north slope under Big-cone Spruces in Spruce Cañon. E.* lanceolata Nutt. → var. composata Jepson.

* Echeveria.

Riverside Co

Aug. 6, 1903.

– Climbed to the top of several Big Cone Pines* to get cones with seeds. It is next to impossible to get the cones loose and their claws are so sharp that one gets cut savagely. I had 36 cuts and scratches on my two hands when I returned fruitless from the chase.

* Pinus coulteri

– Phacelia ramosissima Dougl. No. 2269. See p. 64 ante.

– Stachys rigida Nutt. No. 2270. See p. 64 ante.

Idyllwild, Mt. San Jacinto.

- The forest-rangers here are a very capable looking lot of men. One is a High-school teacher from Santa Ana(?) who has decided that if he can stay in the service he will do so and give up his High School position.

Aug. 6, 1903.

- Manzanita berries, "not the brown but the green ones" are made into a jelly here on the mountain. "It is perfectly delicious and is made as any jelly is made, first the fruit is boiled, the cooked stuff is strained and the liquid is boiled down until it reaches the proper consistency. - Grace Tower.
- The large Manzanita berries are eaten raw, have a fine tart flavor. "We have had them this season in a few places only, twice the size of an olive." - F.P. Lukens.
- Dr. True is half-ill and is living on rice water. He says that at the siege of Pekin the besieged English speaking people found the supply of (rice) short. The Chinese servants "provisions" said: You eat the

Idyllwild, San Jac. Mt.
6000 ft.

rice. Will take the water. We all have plenty to eat then!"

No. 2286. Corethrogyne
Typical as to height. Rays 15, 15, 15, 16. Dry soil in open pines.

No. 2287. Lotus nevadensis (Wats.).
Banner and wings decidedly longer than keel. Petals yellow, with crimson markings. Banner rounded at apex when spread flat (by hand). Leaflets 4 & 6. Stems from the base simple, half-ascending - so as to clear the ground from the base and continue the angle begun. Herbage grayish. Flowers fading lurid or dark red. (When the stems become longer the plant trails over the ground - 3-3½ ft.)

Aug. 17, 1903.

No. 2288. Lotus heermannii D. & H. (Cited as L. douglasii greene var nevadensis Ott. in Fl. Cal.)
About 1/10 of plant taken. Stems trailing over the ground and forming mats 3-5 ft. broad. Corolla yellow, sparingly marked. Banner rounded, slightly but distinctly notched at apex. Banner and wing exceeding the keel but very slightly; flowers fading to a dull pink or brown. Leaflets 5 & 6.

No. 2289. Pinus ponderosa Dougl. Yellow Pine. Foliage dark green, branchlets very thick ~~heavy~~ set at ends with needles. Prickles broad.

No. 2290. Pinus Jefferyi Grev. & Balf. Jeffrey Pine. Foliage of a lighter green, branchlets thinner with foliage, of a lighter green. Bark roughly and deeply fissured.

Trail to Tauquitz

No. 2291. Ceanothus ~~divaricatus~~ leucodermis Gr. ~~oligantha~~ Nutt. Clumps 4 or 5 ft. high. Semi-oppressed. Strawberry Valley.

No. 2292 Gnaphalium palustre. Strawberry Valley near streams.

~~No. 2292A. Zauschneria. Strawb. Valley~~

No. 2293. Lotus (grandiflorus Greene var. mutabilis Ott.) Clear lemon yellow flowers fading crimson. — Canon

No. 2294. Pentstemon. Suffrutescent, 10 ~~18~~ - 20 in. high & 4 ft. broad. Upper lip arched, notched, lobes of lower lip recurving; sterile stamen slightly hairy below. Corolla a dull yellow, purple-tinted on outside. Basal stems, small, at most somewhat larger woody than a pencil. Tauquitz — White Fir. 13 ft. 7 in. at 4 ft. Tauquitz

No. 2295. Monardella. Under pines. Tauquitz Valley

M. odoratissima Bth. ssp. australis (Abrams).

Aug. 8, 1903.

No. 2296. Potentilla (= Horkelia Bolanderi ssp. Clevelandii (Greene) Keck) Petals obovate, notched at apex, stand ~~ing~~ disposed to turbine-mull like. Stamens 10, 5 short & 5 long. By spring, Tauquitz Valley.

No. 2297. Potentilla gracilis ssp. Nuttallii (Lehm.) Keck By spring. See p. 178. Stamens about 20 in 3 sets; petals yellow, roundish, notched at apex.

No. 2298. Gayophytum ramosissimum T. & G. Tauquitz Valley, in meadowlet below spring.

No. 2299. Geranium richardsonii F. & T. Corolla white, pink-tinted, with darker veins. Stamens 10, 5 alternate, shorter.

No. 2300. Mimulus. Meadow, by side of rivulet. See p. 78.

No 2301. Mimulus. " " " ".

Tauquitz Valley.

No 2302. Eriogonum apiculatum Granitic soil, gentle slope bordering marshy meadow. A dainty thing. The daintiest of the group by far. Segments deeply notched, with slender points

Trail to Tamalpais, Mt. San Jac.

in the notch.
- Chinquapin, (Castanopsis sempervirens) forms pure areas smoothed over top and sides as if cared for by a gardener.
- I climbed out onto the ends of the horizontal branches of a Sugar Pine to cut off some cones. How tough and stiff the branches are. Felt no sense of being let down suddenly by a break at all.

- Firs (Concolor) with remarkably enlarged trunks but enlarged gradually to base. The first time I ever saw a trunk that was a fine cone!

— Mimulus moschatus Dougl. var. longiflorus Gray. Det. A.L.G. Jepson 2300.

Aug. 8, 1903.

No. 2303. Silene. Parishii Wats. Vertical fleshy root. Blades of petals cut nearly to base into about 4 narrow lanceolate or subulate segments, 2 minor small ones, 1 on each side at base. Petals & calyx of about same color, lemon-yellow. Loose granitic soil, Tamalpais Peak; underscattered Sugar Pines.

No. 2304. Symphoricarpos. Abundant, low, 2 ft. high, the old stems or canes bending over like last years canes in blackberry tangles and the plants forming a not very dense thicket.

No. 2305. Castilleia. Fasciated. Tamalpais Peak.

No. 2306. Sugar Pine, Tamalpais Peak. Trees 20 to 40 ft. high. Trunks of

Trail to Tahquitz Peak.

Mt. San Jacinto

Cones very short and peculiar. See cones in coll.

No. 2307. Tamarack. Pinus murrayana Grev. & Balf. 9 ft. circ. at 3½ ft, 30 ft. h. Summit Tahquitz Peak.

No. 2308. Limber pine. Pinus flexilis James. Summit of Tahquitz. Young trees look like Tamarack. See cones in coll.

No. 2309. Phacelia frigida Greene. (See p. 81). Moist bank of sloke above stream in Tahquitz Valley. 6 500 ft.

No. 2310. Pentstemon. Matting the ground in opens in the Chaparral, the flowering stems little leafy to the eye the tufts of foliage mainly on the ground. Flowers glowing crimson, upper lip erect, deeply notched, lower lobes narrow, long, spreading widely and at right angles to the tube Sterile stamen glaborus. Sloke just above stream and meadow Tahquitz Valley.

Riverside Co.

August 8, 1903.

Juncus phaeocephalus Engelm. Var paniculatus Engelm.

No. 2311. Sedge, marshy ground, Tahquitz Valley. a Solidago

No. 2312. Senecio — Extensive bushes of a light covering of Symphoricarpos. Tahquitz Valley, 6 500 ft.

— Phacelia patula (Brand). No. 2309, I am now referring to "patula": See p. 80. (5-27-'39).

Jeffrey Pines, 4 ft. through at 3 ft, 90 ft. high, flat-topped, with a heavy thick crown, the main trunk 3 ft or nearly that (2½ ft.) in diam. within 10 ft of top, trunk semi-clear below. The trees are remarkable for the sustained girth of their column with the hat-like or bonnet-like top-flattened + dense. The trees stand so far apart that they do not shed their branches below and so they carry a lot of dead branches

Trail to San Jacinto Peak

(Peak = 10,805 ft.)

= S. verucunda Wats. ssp. platyota (Wats.) Hitch. & Magnin

No. 2313. Silene platyota Wats. Petals pink, strongly emarginate. Open point in forest near Log Cabin on upper trail to San Jacinto.

odoratissima Bth. ssp. australis Abrams.

No. 2314. Monardella. In open brushy slopes of slope of San Jacinto Peak.

*formosus Greene var. ?? — C.P.S.

No. 2315. Lupinus. Slopes of San Jacinto. Rather common in one spot. The bushes around are chinquapin, snow-berry + Ribes cereum.

No. 2316. Symphoricarpos. Slopes of San Jacinto.

No. 2317. Ceanothus cordulatus Kell.; flat, so densely branched as to offer a close network for a covering. Trail betw. Round V. and Log Cabin.

August 8, 1903.

No. 2318. Symphoricarpos. Cane with 3 leaves in a whorl! Trail between Round Valley + Log Cabin.

No. 2319. Symphoricarpos. Log Cabin at Big Wet Cienega.

No. 2320. Ribes cereum Dougl. Log Cabin, Same as on slopes of San Jacinto Peak. See No. 2315. There are 3 shrubs composing the covering on the peak, Chinquapin, Snowberry + Ribes cereum. The first ranges the highest. The pines are scattering. Tamarack + Limber; White Fir + Jeffrey Pine lower down.

excavatus Greene.

No. 2321. Calochortus. Log Cabin. Rich deep soil among ferns (bracken) + grasses.

see p. 92.

No. 2322. Monardella (Nuddy, nana var. tenuifolia) Pine forest, between forks at summit, main trail + log cabin.

Tamarack Valley, San Jac. Mt.

- Tamarack Trees 4 ft. diameter at 3½ ft. diameter, 55 ft. high. The forest everywhere is rather thin, mostly very thin - so that one is suprised at the size of the trees. They are not, however, tall and doubtless grew very slowly.

- The night in Tamarack Valley: Our guide, Mr. Asher, could not locate the cache of blankets on the mountain and so we perforce contented ourselves with a set of horse-blankets apiece. I was amazed at the warmth of the evening. We camped alongside a roofless log cabin by the edge of a meadow. The sun went down but it did not fall

No. 2323. Adenoeslegia. Opens in woods near summit forks of trail. [Cont. 8]

No. 2324. Veratrum californicum Dur. In marshy meadow, near summit forks of trail.

Riverside Co.

August 9, 1903.

No. 2325. Zauschneria californica ssp. latifolia Greene, Strawberry Valley. ~~var. viscosa Jepson.~~

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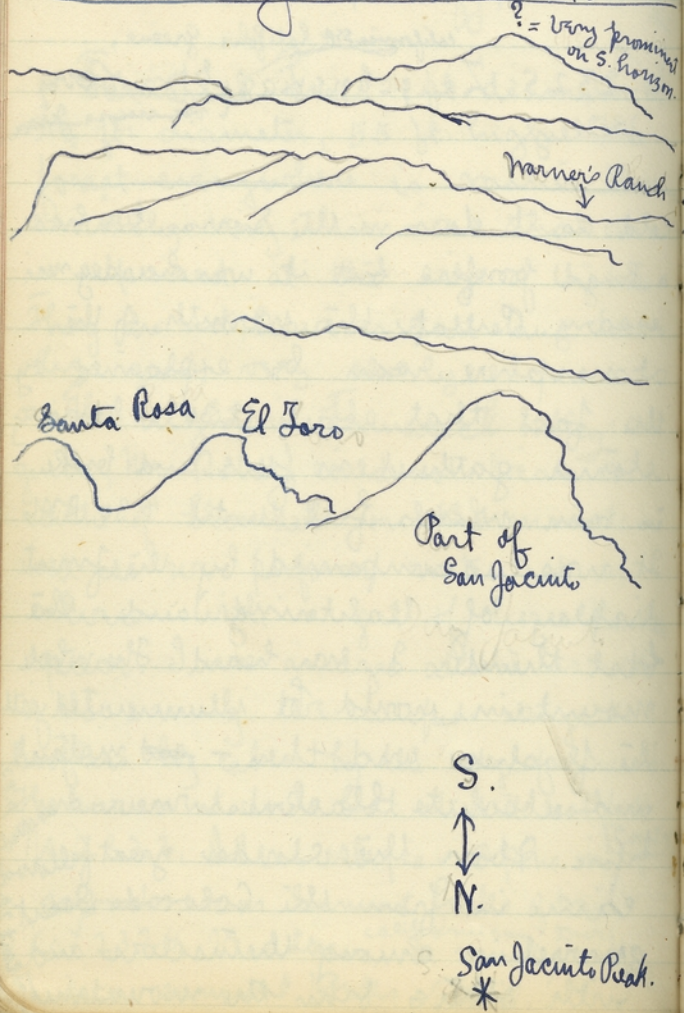
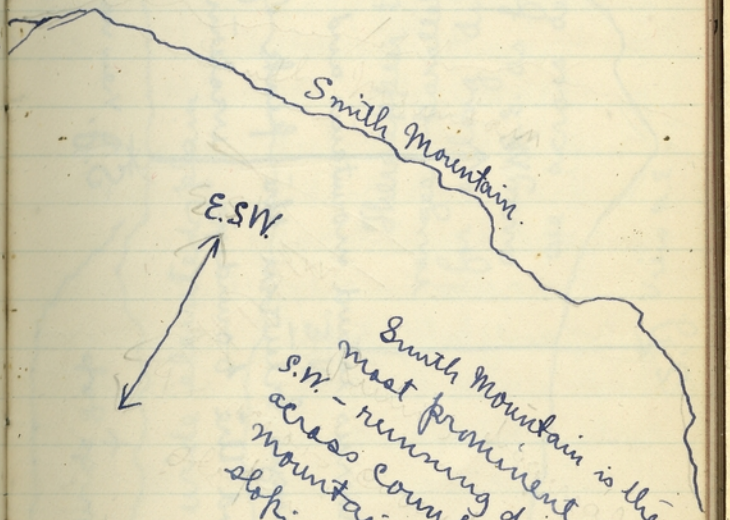
cold as it does in the Sierras. We had a huge bonfire but it was hardey necessary. Perhaps the warmth of the atmosphere can be explained by the fact that about 12:30 a lowering storm gathered in force and broke in rain which fell until 4:30 A.M. It was accompanied by the finest display of lightning and the best thunder I ever heard. The whole mountain would be illuminated with the flashes and then - ~~and~~ instant and absolute blackness never dreamed before. Above the clouds great fellows came in from the Colorado Desert quarreling among themselves and with others from the mountains

Cont. 7.6.8.9.3.

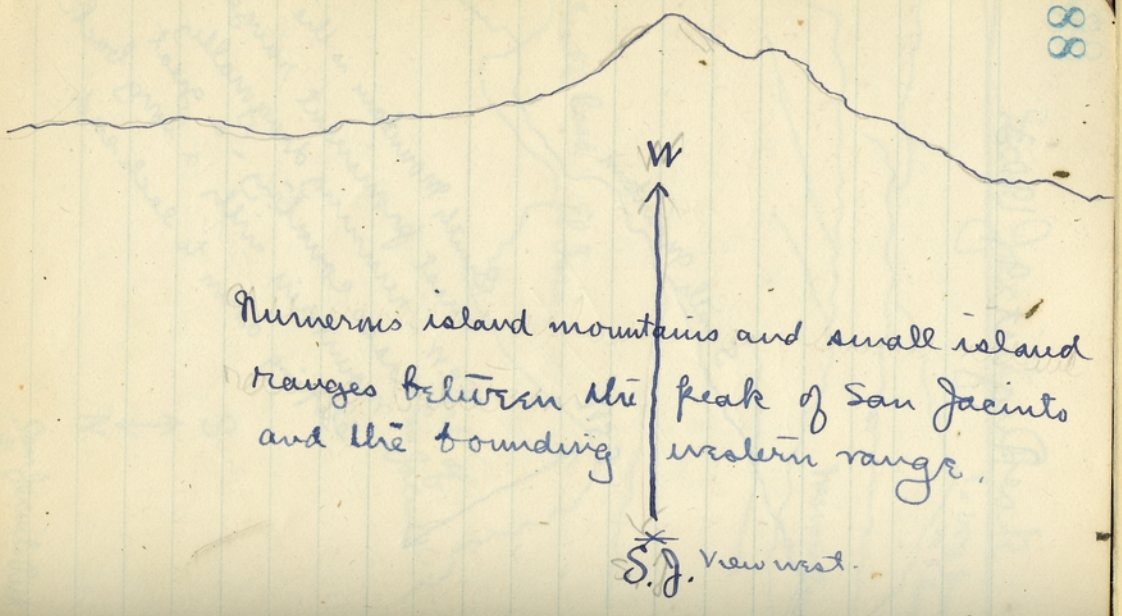
San Jacinto Peak

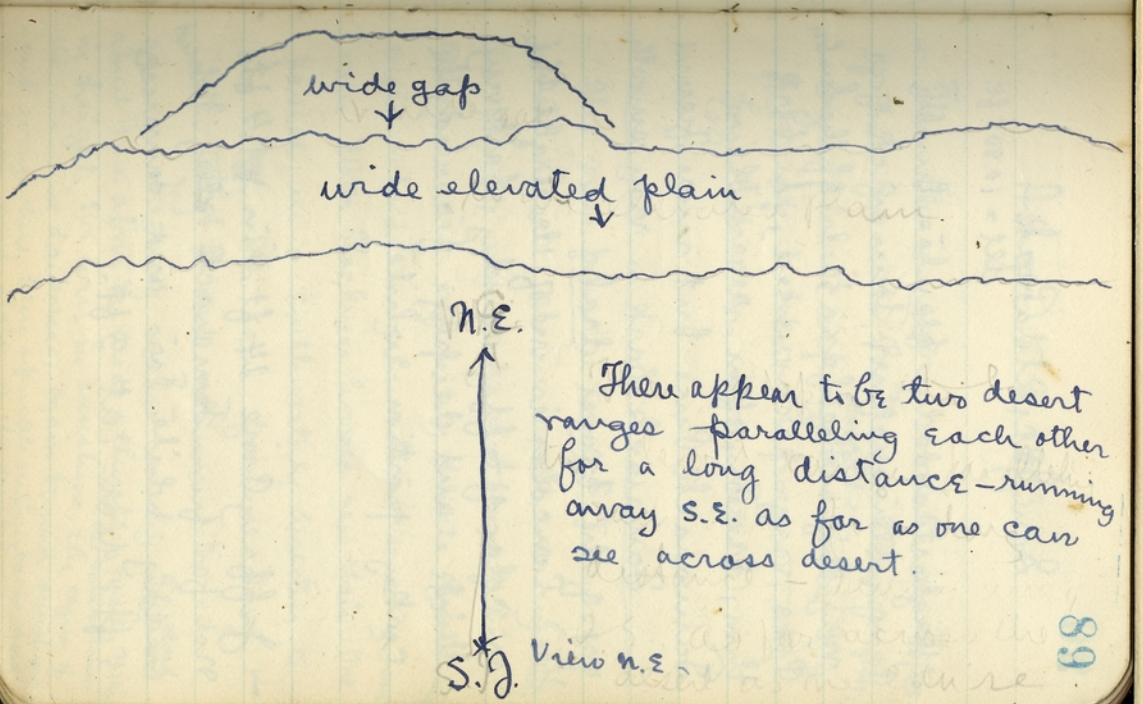


August 9, 1903.



Smith Mountain is the most prominent range S.W. - running diagonally across country - a great mountain with a long back sloping down to each end.


W
Numerous island mountains and small island ranges between the peak of San Jacinto and the bounding western range.
S.J. View west.


wide gap
wide elevated plain
N.E.
There appear to be two desert ranges paralleling each other for a long distance – running away S.E. as far as one can see across desert.
S.J. View N.E.

San Jacinto Peak

alt = 10.805 ft.

- Highest woody plants - Limber Pine, bristlecone; - Tamarack goes very high. The foxtails of the Limber Pine very pronounced; its bark thin, brown, often resembling Tamarack Pine but more fissured.

Tamarack bark is very smooth, one of the brown drabs.

Abies Concolor is one of the light drabs or color of taffy candy; bark very thick and deeply fissured, the corky portion white

- Jeffrey Pine 14 ft. 4 in. at 4 ft. Not far from Tamarack Valley. Noticed many white firs and Tamarack 5 ft. diam. at 3 ft.

August 9, 1903.

- The three cover shrubs on slopes of San Jacinto Peak are: Chinquapin, Symphoricarpos oreophilus, and Ribes. My Ribes specimen taken, however, at Log Cabin on upper Trail.

- The view from the top of S. J. was very fine. The air, storm-swept, was very clear, the purple and pinks and blues of the ranges were exquisitely delicate. Great isolated storm-clouds hung here & there, sending down rain. Utter blackness hovered near them. One passed in a southwesterly direction to our n. The rain formed a long and broad column like an army moving across country. The cloud was about 1 mi. above our heads & therefore nearly 3 mi. in height. The rain column we were in sunshine, the region of the storm in darkness, again beyond sunshine - and everywhere blue & purple mountains and the drabs and slates of the desert!

San Jacinto Peak

– In the great thunder-storm which passed over the mountain on Saturday night, an oak tree in Dark Canon was struck by lightning. This caused a forest fire which the rangers found it difficult to subdue, doubtless, as it was fought for two or three days.

– The view from the top of San Jacinto Peak is easily the finest in California – better than any Sierra Peak, – but of course the Coast Range Peaks of Diablo and Mt. St Helena suggest the same high elements in the mind of Comprehensiveness and intelligibility

– Continued from p. 83. Monardella viana var. tenuiflora Abrams. No. 2322.

August 9, 1903.

Cont. from 7 p. back –

peak of San Jacinto, the protestations growing more violent so that it seemed turbulence could no greater grow. And then without a second's preparation or warning a mighty master descended from above and with a bolt of awful power, yet with a suggestion of calmness and confidence in its strength, silenced and drowned the factions as if they were merely babbling children.

So it was Wagner's Flying Dutchman 20 times repeated. The tumult dies away and the gentle sound of thickly falling rain-drops suggests the bells – once more the warning and again the bolts are riven above our heads. Of course we had no slap

San Jacinto Peak
(10,805 ft).

that night- being quite unprotected. I did not forecast the rain else a dry place of shelter under overhanging rocks might easily have been sought out, as huge broken boulders were piled freely and carelessly about.

The next morning the loose horse in the meadow led me some- thing of a chase in swampy ground but we made an early start for the Peak.

The botanizing in the meadow is very fine and elsewhere too. From the summit of San Jacinto one has to my notion the finest outlook for unstudied compre- hensiveness in all California. One can see great distances in every direction. The mountain

August 9, 1903.

ranges succeed one another north- eastward but one can not only overlook them but detect the vast mesas and desert plains which lie between them. And the highest range in the distance which finally shuts out the view is so far away that it gives no sense of dissatisfaction or complicating of a problem which one desires to solve as in the case of a range near at hand closing the immediate view as in the Sierras. Everything is understandable, comprehensible, to be worked out readily with the eye. We could name road, trail and mountain by aid of the contour map as readily as if the letters were spelled large on the country

Strawberry Valley
Mt. San Jacinto.

- Quercus Kelloggii - named for the gentle Kellogg whose poetic and mystical nature assumed a peculiar comradeship with the Californian trees and whose prose-poetry about them has never been equalled. The tree is now known as Quercus californica. This name is a happy one since the tree is all but peculiar to California, and has the greatest altitudinal range of any Californian Oak. This oak about Idyllwild is more diseased than I ever saw it elsewhere.

- We left Strawberry Valley with regret. It would be a fine place to go for one's vacation.

August 11, 1903.

- Santa Anita, Quercus agrifolia abundant in the rich fields, also a few White Oaks of the Douglas type. Noted from the train. The Sierra Madre range comes down mighty abruptly and the dark cañons cut back into them so deeply that the eye loses sight of them at once

- It is a warm day and one passenger gives as a reason for the heat: The wind has been blowing through the pepper-trees.

- At Los Angeles the newsboys are very insistent and expect a definite no if you don't want a paper. One boy climbed on the car. "Can't read" I said. The boy was still strictly business. No jokes passed with him. Solemnly he said: Got pictures, boss, — buy a paper", he said. I went down for a nickel.

Los Angeles to Berkeley

- Before reaching Surf a broad river* came to the sea, a broad large river for this country, running back (southeast) into the country. A mexicanno peak to right

The view over the great circle of a valley south of San Luis Obispo from the western rim of the of hills over which we were climbing to reach that city. Sand-dunes at this point galore, Eucyla fellows - also old dunes now covered by Lupines. The new dunes are rapidly shifting

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* Santa Inez River.

- San Luis Obispo is set in a fine hollow with daringly sharp little peaks about it. We climb again. This time it is a long and very laborious climb to surmount the range. Finally we pass the summit through a

August 12, 1903.

tunnel and then the coast Live Oaks and a White Oak (either Valley or Blue) come in, in fine style. They fill the narrow valleys at Santa Margarita between the purple mountains. First saw the Digger Pine at the latter place.

- The east side of the Salinas Valley is remarkable for its absolutely barren hills for nearly the whole length of the valley. East of King's City (a few points S.) is a prominent mountain on the further ridge. Northeast and nearer is another prominent peak. The higher mountains show brush (& trees to some extent). Westward the view is quite different.

Vacaville

- Never saw this country so deliciously clean in August - not a bit of dust, haze or smoke in the air. The driving is fine. Ceylum, the last of the Kentuckians, is a good roadster and this is no day to neglect an opportunity.
- We went into Gates Canon. The mountain to the right is very white on account of the burn two years ago, the one to the left is purple with trees and shrubs and shows few glades grassy & white. The stream is quite dry below. We left the horse and toiled up the canon: "Listen! There's water" said Ralph. The sound of flowing water! It was but a trickling streamlet and yet the ear so quick to catch its music.

No. 2326. Salix. Gates Canon

August 22, 1903

- It was rather warm and lizards lay out in the sun. Lizzies as Ralph calls them.
- Quercus dumosa is here and heavily loaded with acorns. A bush 4 ft. high & not broad had 200 acorns on it Ralph thought. The Bay Laurel was also heavily loaded. Dumosa = 4 or 5 ft. h.
- Leather Root is 10 ft. high, and flourishing.
- The settlers have moved out of the main canon above Prater's place entirely - so the botanizing is fine again.
- Grape-vine fruiting, profusely, never saw so large bunches - berries at first white, then red and finally black when fully ripe.

No. 2327. Quercus dumosa - all from one circle
No. 2328. " " - all " " tree
No. 2329 " " - all specs. not from one tree

Gates Cañon, Vaca Mts.

- The Digger Pine follows in behind the first ridge along the uptilted strata of the north wall of the cañon near the summit of the ridge.

It has been mostly killed by fire except where it stands on very steep walls in very open places where it is barren even of Chamise.

- Maple Tree, 45 ft. high, in bottom of cañon, killed by fire, coming out anew and well towards top, like a new tree borne in the dead arms of the old one. There are a few Maples still left. (Acer macrophyllum).
- Maul Oak occurs not far above first forks of cañon and I saw a fairly large tree (35 ft. high) in side cañon on steep east wall.

No. 2330. Quercus Wislizenii, 2500 ft., 6 ft. h.
No. 2331 - Manzanita (A. manzanita Parry) Arctostaphylos Canescens Eastw.

August 23, 1903.

- Went nearly to summit of main ridge but found little Manzanita of the Scrub. It has been burned out badly and does not seem to be stump-sprouting. Other shrubs are taking its place: Quercus dumosa, Bay Laurel, Ceanothus sorediatus, Pickeringia montana, Ceanothus cuneatus and Chamisal.

- Prof. Hilgard says:- Canaigre would be largely used if the supply were regular, but it is one of those miserable things which grow all right wild with us but does not stand cultivation well. In any event we have not yet learned how to work it. The product is'nt what it ought to be. The best way to propogate it from the roots is to quarter the root longitudinally so that each part will have a portion of (cont. bottom next p.

Berkeley

- Mr. Chas. Taylor says "Gillispie at San Jose pointed out a Eucalyptus tree of medium size: I gave $10.00 for that tree, I would have given $25.00 if I had had to." They say that if you buy a wagon made of Eucalyptus wood you will need another. The mechanics do not like the wood, its so hard it comes near to ruining their tools. A great many people are planting Eucalyptus."

the crosstie. Each quarter fills out very rapidly to the original shape so that the increase is very rapid. Irrigation will not do as the tannin percent is very low in irrigated stock. The wild stock is pretty nearly gone in Ariz. & Tex. - the tanners have drawn on it heavily. Deterioration is due to the fact that the sliced product is not dried thoroughly. It will make the very

August 25, 1903.

- Eucalyptus wood used for handles of soldering - irons in Haywards fruit-canning factory - resists heat.
- Mr. Freeman says that a large and beautiful Valley Oak tree at a ranch in the foothills east of Fresno standing near the house was girdled to rid the vicinity of the nuisance of the large red ants which swarmed up the tree at flowering time and fed on the blossoms.

best heavy leathers - any thing that oak leather will do it can do. Requires a dry climate - failed in Florida - Cal. have the climate.

Cinchona tree are peeled in three strips leaving three strips between which fill up again by growth. Only the inner bark of the cork oak contains tannin; the cortex or ~~cork~~ having none. As to extract the cells contain very minute starch grains and these go into the extract, enter the leather and is unsatisfactory on this account. - Sept. 5, 1903.

Napa Co.

St. Helena

(No. 2332, 2334, 2335 + 2338 discarded. No fruiting material, just variable leaf sizes)

- No. 2332. (discarded) Oregon Ash. Shoots from stump of cut tree. Stump 4 ft. high, the leaning shoots from top to base on one side. Many shoots with some 9-foliolate leaves.

No. 2333. Fraxinus latifolia Benth. Same tree, 3-leaflets, from base of shoot - many shoots showing such. Note 1-foliolate leaf at base in axil, attempt also at 1 lateral leaflet.

No. 2334. (discarded) Normal leaf from same shoot as preceding no.

No. 2335. (discarded) Same tree, typical basal leaf.

No. 2336. Fraxinus latifolia Benth. " " , typical leaves, the terminal leaf always different in shape.

No. 2337. Fraxinus ~~oregana Nutt.~~ latifolia Benth. Round leaflets from dif. tree, but also cut (hewed down).

No. 2338. (discarded) Same tree as 2337.

All on this p. from Napa River bed.

Sept. 6, 1903.

Salix hindsiana Benth.

- No. 2339. White Sandbar Willow. Basal section of shoot 3 ft. long and still a-growing and beginning to branch at top!!

- No. 23340. Salix lasiandra Benth. West bank, just above Stone Bridge

- No. 2341. Salix ~~lasiolepis~~ araquipa (Jepsi) Bace ~~Bebb~~ East bank opp. preced. Cherry-red branchlets. or S. nigra?

- No. 2342. Smooth-trunked tree above Stone Bridge = Salix lasiolepis?

- No. 2343. = 2340. Yellowish branchlets and glands on petioles. The beginner should take rank specimens - in some shoots the stipules are small ~~as~~ even almost none or none and yet it seems the same thing.

Salix scouleriana Barr.

- No. 2344. Taken from same tree, small foliage from sunny top, large-foliage from shady bottom. Same as 2342 and =

- No. 2345. also = next.

Napa River, and

hills near Stone Bridge, near St. Helena, Sept. 6, '03 (e. of),

No. 2346. The large-sized specimens are the intensest white beneath of any of the species coll. on this trip. This specimen is from a higher branch than the large-leaved forms.

No. 2347. Very dry chaparral hillside. Gilia. Pale purple narrow funnelform corolla, base of tube reddish. Navarretia viscidula Bth.

No. 2348. Eriogonum nudum var. auriculatum Same loc. as preced.

No. 2349. Gnaphalium. Same loc. as preced.

No. 2350. Quercus agrifolia. Small tree. Last 4 from same loc. on side hill near Stone Bridge [No! acorns biennial! ∴ Wislizenii, but leaves are those of agrifolia!

York Creek, St. Helena, on Santa Rosa grade.

Sept. 7, 1903.

No. 2351. Navarretia intertexta Hook. Dry pond, on hillslope, near summit ~~Grade~~ St. Helena – Santa Rosa grade.* ~~Gilia~~ intertexta (Hook.) Greene Rare.

No. 2352. Eryngium (articulatum?) with 2351. Abundant = Navarretia

No. 2353. Gilia. With 2351. * G. squarrosa H.&A. See p. 113.

No. 2354. Quercus densiflora. Tree 20 ft. h.

No. 2355. Lauschneria Californica Presl. var. villosa Jepson. A grand display of this in the dry bottom of the canon – a plot ten ft. across covered with it (over) top p. 110.

* York Creek runs into the hills west of St. Helena and has a reservoir in its canon. The road goes on and up and over Spring Mountain to Santa Rosa. See p. 113 at bottom.

Sept. 7, 1903.

York Creek Cañon, St. Helena.

Cont: from p. 109.

- the stems were so tall and the flowers so fine. Bumble-bee like insect were sucking the honey from the nectaries at base of tube through slits on outside! But they did not go directly to these slits. One fellow always tried the open mouth of the corolla - sometimes 7 or 8 times and then disgusted seemed by chance to find the slit - and so to work, contented.

- Mr. Frank Pellet says: - Chamise land is planted to grapes because it isn't good for much else. The soil is very light. Zinfandel do especially well on such soils. A great deal of chamise land has been cleared on the hills above and below the reservoir of York Creek for vineyards. At the reservoir one notes the redwoods on the west side, the chamise covering the opposite abruptly rising northeast wall.

(hills. e. of St. Helena),

Sept. 6, 1903.

Pseudotsuga menziesii (Mirb.) Franco

No. 2356. Douglas Spruce.
Young groves rather abundant - trees about 20 years old. Crowd out other things, eg. Black oak.

No. 2357. Wyethia helenioides (DC.) Nutt. Herbage dead and crackly dry but apparently no tomentum. St. Helena, 5 miles east, dry. Same loc. as 2350.

No. 2358. Salix laevigata Bebb. Gates Cañon, Vaca Mts., Aug. 23, 1903. Forks of Cañon, very showery when taken. 15 ft. h.
Salix laevigata Det: C. Schn.

No. 2359. Ceanothus sorediatus H.&A. Aug. 23, 1903. Gates Cañon, Vaca Mts. Wood

No. 2360. Umbellularia Bay Laurel. Gates Cañon. Vaca Mts. Aug. 23, 1903.

Berkeley

- Picris echioides, ten years ago, we had to go to West Berkeley for this, now it is becoming too abundant in the extreme east end.
- Cirsium lanceolatum - five years ago there was a plant of this north of the grounds. Now one sees it here and there all over Berkeley; also in Garbar Cañon (Fish Ranch Road).
- Sweet Fennel, "away up" Garber Cañon on hillside near brush away from road.

No. 2361. ~~Cerasus~~ Prunus virginiana var. demissa

Clumps 20 ft. square near tunnel of new Contra Costa road, west side of the range north westerly slope (locally); bark dark and mature leaves very dark

Sept. 20, 1903.

green; the bushes 8 to 10 ft. h., slender, somewhat ragged at this time in appearance, suggestive rather of Poison Oak, at a glance before one really looks. (Prunus virginiana L. var. demissa Torr.)

No. 2362 Cerasus demissa fruits - from same clump.

- "A man doesn't have to lie; truth is odd enough if he gets it from the right spot".

- Navarretia squarrosa H. & A. No. 2353. Cont. from p. 109. The contemporaneous label reads: Dry bed of little pond above Saint Helena Reservoir (on York Creek drainage).

San Francisco

- Lunched at the Bohemian Club with Mr. Vanderlynn Stow, one of our Grove Committee. He has had trouble with fire this summer as the Bohemian Grove on the Russian River has several times been threatened. He says that burning brands set fire to the tops of Sequoias distant several hundred dead yards from the fire. He commented upon the feeling of awful helplessness that comes over one as one faces the advance of a fire in the forest.

A bee-tree was in the path of the fire. The bees, stupefied by smoke, were driven out, and were picked up by swallows that waiting, seemed to know what was going

Sept. 21, 1903

to happen. Mr. Stow attempted to send a telephone and electric lineman up a Douglas Spruce tree. He got him up to the first limb by means of a rope, expecting that the man would go on with his climbing irons. But the irons would not hold in the bark, it was like striking into so much putty; and the man could not throw a rope around the trunk for the purpose of his own safety; - so great was the diameter of the trunk. The idea was to attach a cable near the top of the tree to prevent its possible fall. "Burbank says he has counted the rings of a Redwood 4000 years old" - V. Stow.

Bohemian Club Grove

- Dave Hetzel, keeper of the grove says split R.R. ties sell for 4½ times as much as sound ties. Why is this? Partly because better trees are selected for making ties, trunks that will split readily.

- It is a heart sick sight to see the damage done by fire - the hills bare, or red-brown where the trees, or brushes, have been killed, and the foliage not burned off but heat-killed. All along the flats are logs, blackened, large and small, which have rolled down the hill and spread the fire

Oct. 3, 1903.

- Mr. Blering says that a factory of the California Canning Association in San Francisco, which is now canning tomatoes presents in its interior a singular appearance in one particular to the American visitor. None of the signs are in English! All in Italian or some other foreign language. "Avisa" they begin! Little children and old women!

- People in California go out into the open. The conditions invite them. They are encouraged. And when they go once they go again. The spell is upon them and it can scarcely again be resisted if one once is saturated with the Californian atmosphere.

Bohemian Club Grove

- Effect of rain on Laurel – the Laurel leaves on the smaller trees on the hillside seem quite smaller than on the trees of the deep cañons on shaded places. The falling mist has caused them to turn backwards and the ends of the branchlets present a star-appearance.

- Blazing of Redwoods by shingle-makers. There are huge blazes 1 or 2 ft square at 4, 6, 8 ft. high on the brinks of the Redwoods. Hetzel says it was done by shingle makers long ago to determine if the tree would make good shakes or split shingles. Some of these huge holes have nearly covered over now.

Oct. 4, 1903

- Felling big pine trees in the Sierras – practice of the sheep-herders to make a night pen for their sheep ~~cattle~~ says Mr. Deering – throwing two trees down so as to make a huge V, driving the sheep in, and building fires at the mouth. If the trees were 200 ft. high, the opening 75 ft. one could easily calculate the area which that would give.

- The mist in the Redwoods was a very fine rain or Scotch Mist. Called a Scotch Mist because that is the only form in which a Scotchman can take ~~whisky~~ water – a very attenuated form. The Redwoods are quite transformed – a hillside of young trees is now very diversified to the eye – so far as appearances go there might be half a dozen different species of conifers – one take up the rain

Bohemian Club Grove

drops and look like Silver fir - some are very dark green, some very light green, some of a decidedly blenish cast to the foliage.

But it is in the night that the Redwoods are at their best, the great columns are so very tall, the tops receiving their due attention by reason of the greater light above - and the whole effect is far more satisfying to the imagination.

- The staging boards used by woodsmen are inserted in holes made by their axes - these holes sometimes called "bitt-holes".

Oct. 4, 1903.

- There are quite a number of tall Redwood stumps among the living Redwood trees and they add - whether by their fire-blackened surface or mossy covering - vastly to the picturesqueness of the grove. As there were a number of prostrate logs lying around in the grove Mr. Slos conceived the idea of setting them up stump-wise to increase the stage-properties. He set up three in a half-circle, to represent a stump that had been split & burned into 3 pieces. He was complimented by the Club members for this work but no one noticed that the stumps were upside down! Why, said Mr. Slos to Mr. Hetzel and myself, the big end is down-

Bohemian Club Grove

however it made no difference - the knots pointed downward! In another case there were no knots but Mr. Hetzel called attention to the roughened places on the split logs, indicating that the pieces were upside down. Hetzel's idea is that there might ends of the fibres or splinters always point upwards. He says, that woodsmen always split downwards on a block of wood or a log. Why? Well, you'll sweat many a drop if you don't! It is all the easier to split down a log or chunk if the same be knotty. Splitting in the other direction, the split is likely to run off in any direction beyond the knot.

Oct. 4, 1903

- A drain is being dug through the length of the valley floor of the Grove to get rid of the winter freshets and prevent the dumping of gravel, silt, etc. Now, altho the drain is 5 ft deep scarcely any roots were struck altho many Redwoods stand near the drain! Why? Because the general level of the floor has been filled by deposit 4 or 5 ft. by the action of the stream! So Redwood roots may not always be surface roots.

- I want to be in a Redwood grove in a wind-storm. It must be a glorious - altho dangerous - experience. Hetzel says every foot of the floor has a

Bohemian Club Grove

fallen limb in it - mostly dead limbs out of the tops - these weighing (he says) from 5 to 300 pounds. So he looks upon it as a highly dangerous journey to walk through the grove during a storm. A great dead tree with top mainly intact stands near the center of the grove. Is it a menace? Shall it come down, says Slow. Many people of the Club want it to come down. Well, a woodsman can't answer that question. It might come down in 2 days or not for 2 years or even 20 years. One thing is noticeable. In a wind-storm the tops of living Redwoods are swaying about in a way that is very impressive - But the

Oct. 4, 1903.

dead tree does not noticeably move since it offers little resistance to the wind.

- Near the Grove is a dry pond - water-filled in the winter. Its surface was filled with a mint,

No. 2363. Mentha Pulegium, probably, which had a very decided altho pleasant odor. After the rain the air was heavy with its fragrance. Perennial by stolons or roots.

With it grew a Tobacco,

- Nicotiana Bigelovii doubtless, which was 6 ft. tall, - fine plants with huge glossy leaves (8 in. long I should think). Had no chance to secure a specimen.

Bohemian Club Grove

- The driving of oxen in a logging team of oxen was a great trick. There were few men that knew how. A man that could do it was an artist. He was king in his line. It required great skill and judgment and courage to keep a team of oxen ahead of a log-train or the skids if the train got started and ran away. There was no chance to get out of the way and the oxen must be kept ahead of the train clear down to the landing and then the team can be turned around suddenly and the logs stopped. Mr. Stow says oxen do not hurt themselves pulling, or strain themselves like a horse. They will pull and pull

Oct. 4, 1903. Sonoma Co.

hard at a load - but they won't pull at a load which can't be budged as will a horse. They will simply stop - that will end it. (The ox-driver at the end of the day throws down his goad - he does not have to feed them.)

- The Redwood sprays which fall away as do leaves form a beautiful golden-brown carpet over the undulating floor of the grove. They fall away differently. Each piece, however, represents mostly 2 season's growth. Tho it may consist of 3 or more.

No. 2364. Fraxinus latifolia Benth. Oregon Ash. - Bohemian Grove.
No. 2365. Corylus cornuta var. californica Hazel - Eagle's Nest Camp.
No. 2366. Salix scouleriana Barr. Sitka Willow - " "
No. 2367. Fungus from Douglas Spruce wood, cracks of annual layers. Bohemian Club Grove.

Bohemian Club Grove to

No. ~~2368~~ 2367A. Sequoia ~~sempervirens~~ sempervirens Endl. Redwood - branchlets - Eagle's Nest Camp. Sonoma Co.

- Baptist Church at Santa Rosa, made wholly out of one Redwood Tree from near Guerneville. The tree was said to be 364 ft. high.

- From the Grove property we rowed up the Russian about 2 mi. to the Eagle's Nest Camp. The shores are covered with a willow thicket, consisting of the Gray Sandbar Willow, Arroyo Willow, Sitka Willow, etc. The Eagle Nest Camp derives its name from a great Eagle's nest on the very tip top of a giant Redwood, built on the summit of the broken axis. The Eagles have nested there for 25 years.

Berkeley, Oct. 4, 1903.

- Guerne-ville, three syllables, former Redwood lumber town, now lives on the summer camper, an industry which is of some moment nowadays in California.

- Green Valley is a station-house, or rather waiting room, one-third the way to Fulton from Guerneville. Charcoal is shipped from this point in considerable quantities.

- Poison Oak on Redwood at Eagle's Nest Camp, runs up a Redwood Tree 100 ft-h, stem at base as big as a fire-hose. We saw many of these shrubs up a trees - often 50 ft. up, the leaves all dyed crimson or scarlet, and making the trees look as if they were illuminated for a festival.

Berkeley

- At sunset the air had a peculiar quality, there was a peculiar clearness which was not merely clearness but a delicate luminosity, which comes before or after a north wind storm. There was a greenish yellow light in the horizon, blue sky above, pink higher - a spectroscope of colors.

- Mr. Kellogg says Redwood should be dried slowly - should be stacked in the yard for a year and a half I think he said - in any event a long time - and 6 mos would seem long to me. He says the Cypress of the southern swamps is stacked for 18 mos - The only way to treat it

Oct. 5, 1903.

- Visited the California Door Factory a few days ago. It is easy to distinguish between Yellow Pine, Sugar Pine & Douglas Spruce doors but it is not so easy to formulate the distinctions in words. The Sugar Pine is very soft and of indistinct grain, the Yellow Pine more sharply grained, the Douglas Spruce sharply grained with half or a part of the annual ring very resinous. They sandpaper doors by machinery. Redwood doors which have been quickly kiln-dried clog the paper soon; then they run through a pine-door, and then go on with some more redwood! In other words all of these woods must be treated according to their individual peculiarities, - each must be worked under its own head.

Vacaville

No. 2368. Heliotropium Curassivicum Var. oculatum (Heller) Jen., now being called "Chinese Pusley". The ovary has no style, being covered by a stigma which is exactly like a country schoolboy's worn-out but still wearable hat! This disk is attached only at the tip or point of the ovary.

This grows rankly in the "old town" of Vacaville, that is to say what is now East Vacaville, in alkaline ground where there is moisture. I do not suppose that the Chinese ever use it for Parsley - the term Chinese being a synonym for false or spurious with a touch of humor and pusley because it looks like some Pusleys.

Oct. 17, 1903.

[- Mr. A. G. Freeman has come home from Portland (Oregon) in highly enthusiastic over the autumn color of the Vine Maple in the Cow Creek Cañon. For 40 miles the train ran through this canon, the woods filled with the gorgeous coloring of this tree. As shown by spms sent by Miss Hoak the Black Oak also colors very considerably in this region - Berkeley, Oct 16, '03]

- Ralph says there is a Poison oak on Rocky Peak in canon west which is as big as a fire-hose in its climbing trunk.

Vacaville to Twin Sisters Peak

-No. 2369. Quercus Morelus, thrifty tree 45 ft. h. near Lagoon Valley school-house. Looks very much like a Madrona - both Ralph and I noticed it. The clusters of leaves at ends of branchlets distinctly spreading, increasing the similarity.

- Madia elegans, some fine plants by roadside in Lagoon Valley Pass. Ralph says there were none a few years ago and that this is locally introduced. I question this as the same (?) I collected in ~~Yuba~~ Cañon ~~or~~ Weldon a few years ago. Of course it is not impossible that it were introduced there.

Oct. 18, 1903.

Twin Sisters Peak.

- From the Suisun Valley (where you ascend the grade to the Reservoir of Suisun City) to the summit one sees very nice in a while a fine Quercus Morelus tree, - very striking they are, all(?) no two exactly alike. Nearest the valley, on the foothills, they seem to run nearer Q. Wislizenii, as we ascend they grow more like Quercus Californica and it is only after we attain some altitude that we find genuine Q. Californica. Some of the Q. Morelus trees appear as if they would be deciduous later in the season. Between the Reservoir and MacCall's ranch (which is very near the notch of Twin Peaks) are a great many rather fine Maple trees (Big-leaf) on the north slope

Vacaville to Twin Sisters Peak

No. 2370. Valley Oak acorns. Suisun V.
No. 2371. Quercus wislizeni? One year old acorns. Suisun Valley one tree, west side
No. 2372. Ditto. one tree.
No. 2373 " " " .
No. 2374. Red-berry. 9 ft. high, the clump at very ground 6 in. diam. Branching low, some smaller branches at very ground Twin Sisters Peak

– Cray-mees, I never heard the woodsmen or "the folk" pronounce it otherwise. So says Ralph. The folk speak of — "Going up into the Blue Brush" — a name which is a convenient generalization for them, the mountains which are covered with it looking blue at a little distance as does chaparral!

Oct. 18, 1903.

The Trees and Shrubs of Twin Sisters

- Acer macrophyllum, trees 45 ft.
- Heteromeles arbutifolia, uncommon but two clumps arborescent and 15 ft. h. Lower slopes.
- Adenostoma fasciculatum, eastern slope of the north peak and along the summit wood very hard.
- Rhamnus crocea ilicifolia, wood yellowish. In valley-let just below notch.
- Quercus wislizenii, in scrub form on summit, a member of the chaparral and the most typical as to stubbornness, unyielding resistance. A living thing and yet as futile to fight against as a stone wall. One might as well argue with barb-wire.

Vacaville to Twin Sisters Peak

Trees and Shrubs of Twin Sisters Peak

- Maul Oak, summit North Peak, 15 ft. high. Leaves small.
- Rhus diversiloba, everywhere - now distilled red-purple and crimson in its foliage.
- Blue Oak - no acorns this year - lower slopes.
- Black Oak - trees
- Valley Oak, trees at Reservoir and 1½ miles further up, in small form. The sterile shoots with small deeply lobed leaves; and the leaves of fertile shoots larger and less deeply lobed.

Oct. 18, 1903

- We climbed to top of Twin Sisters Peak from the Italian Ranch which is just below the saddle. The Italian Ranch is about 3 miles northwest of the Suisun Reservoir. We climbed to the saddle and then worked up to the summit through Chameez which grew thicker and at the summit passed into Chapparal. The Chapparal (manzanita, scrub Q. Wislizenii and tall Chameez) was very obstructive, particularly the oak, and would neither let us through it or over it, and we found it very difficult to get down and crawl under it. Ralph suggested it would have been easier to build a rock tower 40 ft. h. at the saddle to view the country and determine our route.

Vacaville to Twin Sisters Peak

No. 2375. Quercus Morehus tending strongly toward Black Oak, i.e. A. Californica. Above Reservoir

All from one tree

No. 2376. Quercus Wislizenii. With preceding. All from one tree

No. 2377. Quercus Morehus. A little below Reservoir. All one tree

No. 2378. Quercus Wislizenii (with some Morehus blood!). With preceding.

No. 2379. Quercus Californica. - Just above Reservoir. All one tree. alt 1500 ft. about

No. 2280. Blue Oak - all one tree. with preced.

No. 2381. Morehus Oak - all one tree - leaves suggest Chestnut! - well up towards Italian's Ranch. I have the loose leaves marked =2381A as from the same tree - I noted at the time the great differences on one tree - but

Oct. 18, 1903.

in the hurry of our ride down there may have been a chance of error.

- No. 2382. Blue Oak - with preced.
- No. 2383. Valley Oak - with preced. all one tree
- No. 2384. Valley Oak - well up on Mountain.

No. 2385. Quercus Wislizenii - with preceding. All one tree.

No. 2386. Quercus Morehus, one spm. off color. Near Suisun Valley floor, on foot hills. but all one tree!!

No. 2387. Calycadenia truncata DC. Twin Peaks Steep gravelly slope in open.

No. 2388. Maul Oak. Twin Peaks, near top Twin Peaks

No. 2389. Rhamnus crocea Nutt. var. ilicifolia (Kell.) A.B. Wolf tree or rather bushy tree 14 ft. h. and perhaps 10 or 12 ft. broad, simply loaded with the very beautiful red

Solano Co.

Vacaville to Twin Sister's Peak

berries. The berries look like currants - so scarlet are they. I never before saw such fine clusters - 18 to 35 berries in a cluster by actual count. Of course the sunlight on them enhanced their beauty. In a little flat just below the saddle of Twin Peaks, east slope.

No. 2390. Acer macrophyllum Pursh. Trees very abundant just below Twin Peaks and for some distance down the east slope, 18 - 40 ft. h., along streamlets, near springs, or in place where (it is a fair presumption) there is surface water (arctostaphylos glandulosa Eastw. var. Cushingiana Chapparal (Entw.)).

No. 2391. Manzanita of summit and western slope. Adme

Oct. 18, 1903.

No. 2392. Quercus wislizeni, Summit. Chapparal. This is the thing that blocked our way in the chapparal.

No. 2393. Mountain Laurel. Summit Twin Peaks, sticking its pointed tops above the Laurel - somewhat.

No. 2394. Maul Oak. Summit Twin Peaks.

No. 2395. " " " " "

No. 2396. Blue Oak. Above Reservoir.

- Never saw such an extraordinary lot of variations of the Morehus Oak sort as on Twin Sister's Peak from the base of the foothills to summit of Peak. Fine looking trees of very typical Morehus - more of them than I ever saw or heard of in all the rest of the Californias.

Vacaville

No. 2397. Quercus lobata. Jewett Ranch ("Fayer-banks").
No 2398 Quercus lobata. With preced.
No. 2399. " " Wells Lane
No. 2400. " " acorns. " "

Driving out to Jewett's Ranch today I noticed how abundantly the young oaks are coming up along the roadside - seedlings from a great Valley Oak that stands by the roadside in the field. They have been negatively protected - cattle no longer run in the lanes loose. This oaks is fruiting abundantly - each tree here and in Wells Lane has its own type of acorn or it might be better to say that one type prevails in a tree.

Oct. 19, 1903.

The Narrow-leaved Milkweed is now shedding its seed. It thrives in the hardest driest black adobe but particularly in cultivated or summer-fallowed land. It is a xerophyte, the leaves having been reduced very much in breadth. The flowers are the smallest of all our milkweeds. The white Milkweeds are plants of dry soils generally but their heavy coat of wool protects them in the places where they grow. The only ones which are not white are the Narrow-leaved, just described) and the Gamphocarpus cordifolius - an adaptation to xeral conditions broad-leaved but green!

Vacaville

- The Tarweeds here are of three sorts; Tarweeds of the fields, esp. hayfields - very gregarious always; Spikeweeds, gregarious too; Rosin weeds, of the mountain hillsides and usually scattered or at least not covering extensive tracts.

No. 2401. Quercus lobata Juvetti Ranch. birth 2397. Same tree
No. 2402. Q. lobata. Wells Lane.

- Poison oak takes to fence lines.

Oct. 19, 1903.

Berkeley, Oct. 26, 1903.

- Sudworth came today. Have been expecting him sometime. He says that at Fredalba (San Bernardino Range are the largest cones of Pinus Coulteri to be found that he ever saw.

- Mr. Goddard noted the ~~scrub~~ Bear Oak~~s scrub Tan Oak~~ from the stage between Grants' Pass & Waldo - (near Lou's Station?)

- Phyllospadix. used for fireproofing and deadening between walls in Sprecher's Physiology Hall, 1903.

Berkeley to Willits

- Picris echioides - frequent at St. Vincents.
- Populus Fremonti, an old but not very large tree, just south of Santa Rosa.
- Prominent clump of Redwoods dominating the western valley flour - west of Mark West Station.
- Digger Pine - first noted at Geyserville, ran out of high fog here too! The Digger Pine never pushes into the Sea Fog belt. The fog comes in at the Russian River Gap and fills the country from Healdsburg south. Near San Rafael we found sunshine but ran into the high fog again towards Petaluma

Nov. 1, 1903

No. 2403. Quercus lobata. Little Lake Valley, 95 ft. h. & 4½ ft. diam. at 4 ft. Fine tree. Acorns very small. Notice that the leaves of sterile shoots are decidedly smaller than the ordinary leaves. These slender sterile pendulous shoots are quite peculiar to the species so far as I know. At least Garryana has it them & that is a good distinction between the two.

No. 2404. Quercus lobata. Little Lake Valley. A tree stands alongside the one from which material was taken that is 115 ft. tall and 20¼ ft. in diameter at 4½ ft. The acorns are very small, so small that as valley oak acorns one looks at them dubiously. But at this second tree I find some typical cup and some acorns that are like some at Vacaville. The acorns as a whole appear to be not well-developed. The sterile shoots of

Little Lake Valley.
Mendocino Co.

young trees (erect, not drooping) are small-leaved as well as those of the pendulous shoots.

No. 2405. Alnus rhombifolia. Little Lake Valley. Are this material from one tree!

- The Wild Grape colors up pretty well in this region. "They" have had frost here, previous to my coming, this season.

- Dr. . of the International Geodetics Association observatory at Ukiah says there were many forest fires this fall - so many that the smoke filled the country and one could not see more than 500 yards.

Nov. 1, 1903

Re. Quercus lobata.

- Have been walking all the afternoon since the train arrived over Little Lake Valley about hillside among the great oaks of the valley floor. They are fine indeed - 60 to 115 ft. high - It is great to smell them again - I like the odor very much. They are in full green leaf + show no sign of autumn.

There are three regions where the Valley Oak is particularly well developed - Visalia, Chico and the Willits - Round Valley Region

Mendocino Co.

Willits to Hawley School
alt. 1400 ft. 1800 ft.

No. 2406. Quercus Garryana. Notice that the lobes commonly point upward and that the lobe is likely to be angular on account of the sharp straight line on the lower side of the sinus.

- Black Oak, leaves between 4 & 7 inches long.

No. 2407. Black Oak. Acorns very small

- Diagram of rotting in Valley Oak trunk - transversely oblong spaces near periphery.

✓ No. 2408. Deerfoot. Hawley School. Achlys triphylla DB.

✓ No. ✓ 2409. Madrona. Arbutus Menziesii Hook. Also single leaves from stump sprouts 5 ft. high

- Tan Oak - stump sprouts 6 ft. h, 2 years old.

Nov. 2, 1903

- Chestnut (Castanopsis chrysophylla) near Hawley School - 6 ft. diam at 4 ft.

No. 2410. Chestnut aments, picked from ground, tree just named. Note branching character. Also fruits.

No. 2411. Cornus ~~Canadensis~~ Nuttallii Aud. Tree very slender, 30 ft. h, with long slender, horizontally spreading or half-drooping limbs the leaf rosets mainly on spurs and dyed scarlet and crimson by the early frosts. The effect is particularly fine on account of the graceful curves of the drooping branches, the color of the leaves, and the mottled white trunks. This tree is here the sole expounder of the autumn festival of the woods - surrounded by sombre Douglas Spruce, Redwood & Tan Oak

Hawley School to Northwestern

- Madrona, 13 ft. 6 in. circ at 4½ ft. 65 ft. h. - beyond Hawley School in county road.

No. 2412. Castanopsis chrysophylla Dougl. Chestnut. One shoot in 2 sections showing leaves persistent for two years.

- Fine Oak acorns - always comes with a close fuzz when on the tree - worn in falling however this covering is injured here & there - it is so delicate - and soon it rubs quite away.

- Rhamnus californica 16 ft high - broad as well as high, no unusual height in this region. Berries some Apple-red but mostly black now

- Northwestern Redwood Co. is operating here.

Cas Mill, Nov. 2, 1903.

- The tops of the Madrona trees are filled, may loaded with bunches of scarlet berries - in the sunlight the effect is great - I have seen no more beautiful sight in the woods - the top of this tree is bare an almost balen of leaves. That is maturity, joyful and triumphant, triumphant and joyful!

- The hotel at Willits (Hotel Willits) is the first modern structure, up todate in every way, that I have seen in California in a country town. The dining room is a most cheerful place, great fireplace in which 4-ft logs are burning, flanked by young Douglas Spruce trees in which Electric lights are hung.

No. 2413. Quercus Lobata. Sterile shoots - same cluster trees as 2403.

Ukiah

Went out to Mill Creek Canon thru the beautiful valley lands - the great Valley Oaks rearing high, some broad, more tall with the pendulous branchlets cascading from their tops, - it gives one the same sensation (walking along the valley with the trees so high above one) as passing down the Grand Canion of the Kern.

Mill Creek Canon is very beautiful now. The Oregon Ash is in its yellowing time - it does not color beyond its straw yellow - but even so much helps lighten the woods at this time. The wild grape (Vitis californica Benth.) covers everything along small streams - a succession of small and large mounds of

Nov. 3, 1903

various shapes - In the canon the tips of the leaves are dyed crimson. Here and there some of them are whole clusters deep crimson illuminating the tree in spots - but the leaves as a whole are not touched by color. The purple berries of the Bay Laurel hang from the ~~end~~ tips of erect branchlets all over the tree. It is really very pretty. The oaks scarcely color at all - most of them not at all - the Black Oak does a little and at higher elevations responds - the Garry Oak lights the hills decidedly by yellowing - but does not color them.

Nos. 2414 - See ahead 5 pp.

Berkeley, Nov. 7, 1903.

- The day was brilliant - because the North wind blew - most people however did not know it was blowing - the hills of Berkeley and Oakland from the Bay were magnificent in their clear-cut outlines and dark trees and shadows. Most people hate the North Wind but to it we owe our finest landscape effects. It cleanes up everything and paints the whole with a light or color that is neither one or the other and yet appeals vividly to the imagination. It does strongly appeal to all who come here and whose impressions are still vivid and have not become commonplace through

Nov. 10, 1903

long residence.

- Bald Cypress Tree + Gnko Tree by old greenhouse, planted about 1872 acc. to memory of Prof. Hilgard. The English Oak Tree near the Cherry Trees at Old Seed House, just pp. baseball field 15 years old, acc. Hilgard by 25 years acc. Kellner. The former is more likely to be correct, altho I fancy in this case 20 years would about hit this tree.

- Prof. Ralph Smith says Newton B. Pierce of Santa Rosa has been working a long time on the bacteriosis of the English walnut - Black spots appear on the green shoots become ½ in. long or so, also attacks the 2 and 3 fruits on the twig + they fall off, or they persist for a time + the kernel is no good as hollow. It is a very serious

Berkeley

matter to the growers in S. Calif. They offered last spring $20,000 for a remedy. Pierce did not like this. The growers (prize) long before held a convention (they have several walnut associations) & voted to ask the Govmt for help, but it was decided to see Pierce first & a committee was sent down. He told them that he was doing all that could be done. Later another convention it was voted to petition the Govmt for an asst for Pierce since it was reported he was making no headway because of lack of time. Pierce told them again that he didn't want an asst - that he didn't propose to have another man step in and take the credit for something he had been working a long time on - that he was doing all that could be expected. The growers

Nov. 14, 1903.

- many of them - felt that Pierce was not willing to help them or tell them what he knew. Others think he is all right and a mighty fine fellow. So it goes. The growers finally offered the prize. A problem of this sort is the very hardest kind of a one - all bacteriosis problems are, and with this and the Anaheim disease Pierce has two difficult things to handle. He has the reputation, however, of keeping very much to himself and not letting people know what he is doing.

Smith[illegible] remarks on the great interest which people here in Calif. have in their problems - in the East a man will say: Oh yes, you can go look at the field. I don't mind"!!!

Mill Creek, Ukiah

No. 2414. Vitis Californica Bth. Dark depths of the cañon.

No. 2415. Quercus Wislizenii. Fine trees standing in a field, south side of road leading east to Ukiah Insane Asylum and about 1. mile west of Asylum. One tree was 75 or 80 ft. high, possibly more, and the bunk at the ground was 6 ft. in diam. in one way. Forked very low but the main branch above the fork is unforked for some distance. - Ukiah Valley.

No. 2416*. Quercus chrysolepis. These are the fine trees described previously, July 3, vide. acorns not from identical trees as herb. spms.

No. 2417. Quercus Garryana. With preceding. Mill Creek.

No. 2418. Ditto 2417.

No. 2416 a. Acorns with large cups.

Nov. 3, 1903.

- The cañon is a narrow deft, the south wall especially abrupt, so that it is very cool and shady in the bottom of it. And it is most beautifully wooded.

No. 2419. Quercus Chrysolepis.

No. 2420. Torreya californica Torr. Nutmeg Tree - 15 ft. h.

No. 2421. Acer macrophyllum purch. Leaves from new shoots, which come from the stump of a tree, the stump being 10 ft. long, having fallen over, but still with a good many roots in ground. These leaf-forms not exceptional on this stump.

No. 2422. Tan Oak. Hawley School, Nov. 2, 1903.

No. 2423. Do. 2422.

Mill Creek, Nov. 3, 1903.

No. 2424. Black Oak. Hawley School, near Willits.

No. 2425. Umbellularia fruits, pointed at base! Mill Creek Canon, Ukiah.

- Eucalyptus logs in the rough are said to bring $3000 M. now.

- I was the first youth to come to Univ. of Calif. from Vacaville. This year the Vacaville High school which has been sending down a few each year sent eight - nearly the whole graduating class! So says Mr. Jewett. Why are so many coming? said I. - With a twinkle in his eye, he replied: "Oh, I guess they want to be ~~botanists~~"

Berkeley, Dec. 2, 1903.

Professors of Botany"!

- Stubenrauch says that at Chico they are cutting Yellow Pine into rustic - Redwood has gotten away from them! (In price)

Vacaville, Dec. 24.

- Great quantities of Christmas Berries (Toyon) go out of here to the S.F. market. The "producer" gets $5.00 a ton. Miscellon he gets 6 cents a pound for! $120.00 a ton!

- White Oak (Garryana) lasts (as posts) far longer than Black Oak! test Moses Hendricks.

- H. Rowland Lee, U.S. Geol. Survey., Soils, called today. Working in Nevada on the Carson River irrigation project of the govmt. Was at one time in charge of the Forestry Station at Santa Monica. Think Eucalyptus wood is best cut in midsummer. Then the wood is set. (Graduate Royal Kew Gard.)

Berkeley, Jan. 27, 1904.

– Mr. F. F. Thomas says consumptives ought to go to Yuma! I guess he is right but many people would rather die than go to Yuma! So they choose a half-way place – the mountains perhaps where they get dryness and a semi-compensating altitude.

– Miss Hoak say the folk at and about Ashland call the "Madrona" by the name "Laurel". Doubtless this is because of its glossy leaves merely. She said the autumn colors of the oak foliage there was very beautiful – the tints were so soft, ~~and delicate~~ the reds and the browns – no high colors.

Feb. 3, 1904.

– Miss Georgia Rattan, '04, Bot. 12, says orchardists at San Jose have increased the number of bee hives very largely in order to secure or ensure fertilization of the flowers in the orchard. The question now is: Does rain injure the pollen by wetting it or does the honey become so diluted that the bees don't seek it? The injurious effects of rain at blossoming time are very great, but just what is the character of the injury?

Berkeley

— Drummond, Thos.

"For the future I took care to keep my gun in better order, but I found by future experience that the best mode of getting rid of the bears when attacked by them, was to rattle my vasculum, or specimen box, when they immediately decamp." — Hooker, Bot. Misc. 1:197

— Parry, C.C., sails into Mrs. N. Brandegee (Bot. Gaz. 11:54).

— Newberry, J.S. Portrait in Trans. N.Y. Acad. Sci. vol. 12. frontispiece.

— Coulter, Thos., Explorations of. By Coville, Bot. Gaz. 20:519-531 (1895). cf. Jour. Roy. Geog. Soc. Lond. 5:59-70 — 1835 - map.

Preparation of Specimens in Herbarium Making.

— Specimens and Specimen-making. — Bot. Gaz. 11:128-137. How to coll. various classes plants, 135.

— Bailey, W.W. The Botanical Collector's Handbook.

— See F.B. 12:189.

— Perrédès, F.F.P., Preparation of a Student Herbarium (Pharm. Jour. Sept. 14, 1901.).

— See Cover, "Directions for Collecting Plants" sub D in file of "Manuscript Papers."

— Directions for collecting recent and fossil plants. F.H. Knowlton. U.S. Nat. Mus. Bull. 39. Pt. B.

— Pressing plants with double-faced corrugated paper boards. Geo. E. Nichols & Harold St. John. Rhod. 20:155-160.

- Collection and Preparation of Specimens of Flowering Plants (Nemophila, 3: 11-12 (1919), W. L. Jepson

- Haenke, Thaddeus, Cal. botanical explorer. cf. Dianthus glacialis Haenk; Jacquin, Coll. 2: 84
- Harlow, W. G., collected in Cal. See portrait. Sci. Mo. 9:93.

- Teratology. Heracleum lanatum Michx. Herbary Comm, Berkeley, W.L. Jepson, 22 Feb. 1898. Bracts and bractlets large foliaceous, 2 to 3 in. long. — U.S. Herb.

- Teratology.. Angelica tomentosa Nels, carpel with 6 wings. — Calistoga, W.L. Jepson, 31 Aug. 1895.

- Berberis aquifolium Pursh. Roots used by the Hupas for a color-dye in baskets. Called "False Oregon Grape" in Rep. Dept. Agr. 1870, p. 413. cf. Cosper, Med. Pl. Calif. Berries used for preserves.

- Pine trees and cones; no relation of course between size of tree and cone, but it is interesting that I have so many inquiries as to this.

Berkeley, 1904.

The rains broke November 5, 1903 after dry season of unprecedented length. It lasted from April 1 to November 5. There was some rain in November and December. But January was the most beautiful month of Summer-like weather, even and regular, the whole month. As the month wore on, there was increasing anxiety for rain and prayers in Southern California. In February rained whole month; and now, Mar. 10, a storm is here, and has done its level-best. An enormous amount of water fell in a few hours and the high wind

March 11, 1904.

wrought havoc. The litter beneath the oak trees was interesting - dead pencil twigs - 3 to 6 inches long, scarcely a living twig, mostly dead stiff -ale cleaned out of the tops. Some foliage too. And a lot of foliage cleaned out of the pines!

- The years go by and one gets so little done compared with his desires. There is nothing new discovered. If one did not live in hope he would leave the University unless he loved to teach merely. It is the routine that kills time. But even more the unexpected things which consume one's extra time - meeting visitors, answering correspondents, helping

Berkeley.

the Supt. of Grounds and other Dept to things, bills, executive details, taking care of plants, etc, etc. One is glad to do all these things. He is only appalled afterwards.

It is like combing one's hair - you got to do it next day just the same! Yesterday's doesn't count!

Vacaville, March 20, 1904.

- Sambucus glauca in full foliage, round-headed clumps of it in front of the Little Oak Farm in fine fettle. Simply bursting with its pride of leaves as does also the Buckeye - The round balls of the latter, set on the

Vacaville, March 20, '04

bases of the hills, are delicious to the eye. So dark-green and full, against the light green of the hills and the dull dead brown of the oaks. - [And by the end of August leafless! or even earlier]

- Cottonwood, about 10 days past male flowers! Female catkins with a round thinnish collar beneath the ovary, with entire rim or edge. Stigmatic lobes commonly 4. Scales of the winter bud = 7 to 10. Ovary strongly ridged (almost lobed), with 6 to 8 ridges. Bark white or whitish. No leaves as yet, buds just beginning to burst. Leaves involute!!

No. 2426. Cottonwood. as above Populus Fremontii Wats.

Redwood Canon Road,
mar. 1904.

No. 2427A. Chingrapin. Redwood ~~Peak region~~ Canon road - at summit. ~~February~~ March, 1904.

Dec. 1903, Berkeley.

- Quercus agrifolia Née. Tree near s. end of Cinder Track bearing many acorns with 2 or 3 seeds! Spms in Bot. Museum.

- Potentilla gracilis Dougl. var. rigida Wats. Jepson 2297. See p. 77.
No. = var. hallii Wolf.

Berkeley.

- Andrew D. White says in his autobiography:- "I would desire for my country three things above all others: from Great Britain her administration of criminal justice; from Germany her theatre; and from any European country save Russia, Spain and Turkey its government of cities."
- Jan, 1905.

- Mirages of the Desert, Miss Strobridge. (Miss Edna Wemple).

Berkeley.

- Ransom, Col. L. cf. Kellogg, For. Trees Cal. 95.
- Nuttall, one should not fail to glean Californian notes as to his whereabouts from his Sylva.
- Kellogg, Forest Trees Cal. It is remarkable how many trees he left out: Acer macrophyllum, Aesculus Californica, Populus trichocarpa, etc.

Berkeley, Dec. 10, 1903.

- Quercus agrifolia. Tree felled at College Ave. Bridge (it was nearly dead), within 5 ft. of ground the trunk showed:

Heartwood = 63 years, the radius 9½ in. in one direction and 3¾ in. in other direction. Broadest annual rings were in heartwood at 40 years = 5/16 of an inch.

Sapwood. = 52 years, 5 in. on one side and 6 in. on other side (radius)

Tree grew fastest from 30 to 50 years of age. It was 50 or 60 ft. high. Age = 115 years, almost 125 years. A young workman (White) made it 100 years. Not less than 100 (!!) nor more than 125 (!!)

Berkeley, Mar. 1903.

- Juglans californica, fls. from Covina, stamen counts:
Miss Stout: 25, 23, 22, 21, 23, 24, 23, 20, 26, 23, 21, 26(!!)
Miss Hannah: 26, 23, 24, 26.
Miss Whitehead: 25, 25, 25, 24, 26.

Material from Pasadena, 20 miles north, through Miss Stout. – "stamens always between 20 and 30" – Miss Stout.

Miss Harriet Smith sends the Covina material.

Salix lasiandra, Stamens 3-5.
" laevigata, " 5-7 or 9.
" Nuttallii var. brachystachys, " 2.
W. W. Mackie
1903, Bot. 4.

Oakland, April, 1903.

- California Door Co. shipped 40,000 doors to Kansas last year; 25,000 to Boston. Will ship about as many this year: Sugar Pine door was the only door - but price went up so that Yellow Pine doors are accepted. Next Yellow Pine went up (in price) so that it almost stands with Sugar Pine in price. Redwood doors are being sold in greater quantity than ever before; looked upon however as an inferior door or substitute door. Knots in Yellow Pine with us loose. Why is it? Eastern White Pine knots, say, will be tight; at least boards with tight knots will pass as

Oakland, April, 1903.

2d grade doors. Our doors they will "hold up" for loose knots.

Can't talk to Eastern dealers about "Yellow Pine". We say White Pine, generic term for ponderosa and Lambertiana and the stock sells. "Yellow Pine" is in bad odor on account of the southern U.S. Yellow Pine.

We pay 20% less for Mendocino Redwood than Humboldt Redwood.— Mr. Waller Kellogg, of the California Door Company.

I can remember when Sugar Pine was manufactured into raisin boxes — beautiful they were too. Saw them as

Oakland, April, 1903.

a boy of 10 or 12. Mr. Waller Kellogg says of lumbering that the companies are cutting closer every year. The McCloud Company left the Cedar and Fir altogether, then went back after it and cut it clean for box lumber. Sugar Pine became too costly for fruit boxes. Big Tree wood brittle and not so strong as that of the Coast Redwood. Does not work so easily, says Mr. Kellogg.

Berkeley

-Burke, California collector, Cf. Bot. Mag. t. 4953

"In studying with some care the geographical distribution of various large and widespread groups of closely allied animals x x x I have been much impressed by the necessity of a most minute study of their morphology as a preliminary to any attempt to deal with the facts of distribution. I think there is no greater mistake than to suppose that distribution, or indeed any other large biological question, can be studied to good purpose by those who lack either the opportunity or the inclination to go through what they are pleased to term the drudgery of exhaustive anatomical, embryological, and physiological preparation." - Huxley, on the Gentians, Jour. Linn. Soc. 24: 116 (1887).

Apr. 1903.

- Salix laevigata. Bebb, leaves broadest toward apex, light green, nearly alike on both faces; pistillate very slender, staminate flexuous; apex abruptly acute; twigs brown; stipules none as not prominent - Berkeley material
- Salix lasiandra Benth. Leaves broadest at middle or below, drawn out at apex into very long slender points, darker green above, as if glaucous below; twigs yellowish - Berk. material.
- Salix, leaves almost round sometimes, very dark green and so netted-veined as to have a somewhat hairy appearance - All above notes from fresh mat. brought into Bot. Lab. Apr. 1903, the record made on a slip and copied herein July, 1910.

Samples sent Sudworth

No. 85. Quercus densiflora: 2& yrs old. San Vicente Creek, July 16, 1903. Bark with all the characteristics of 2d growth. Trunk 5 5/12 in. diam at 14 in. Sample taken at base. One trunk. Tree about 25 ft. high. W.L. Jepson, Santa Cruz Mountains.

No. 86. Quercus densiflora. Trunk 3 x 5 ft. diameter, undercut and then sawed! ~~Then undercut~~! 120 years old at least, rings hard to count. Sample taken near base on ramp., n.w. side of tree. July 16. 1903. Santa Cruz Mountains.

No. 87. Quercus densiflora. Circ. 8 ft. 9 in. at 4 1/2 ft. Sample taken easterly side of tree at 4 1/2 ft. San Vicente Creek. Smooth-barked tree 115' ht. G.

Samples sent Sudworth

No. 88. Same as 87 & within 2 ft. of it. Sample taken in same way. Rough-barked tree. Circ. 7 ft. 8 in. at 4 1/2 ft. Height about same as 87. July 16, 1903 Santa Cruz Mountains

No. 89. Quercus densiflora. Flesh almost indigo blue on cutting, very sappy & dinghy. Sample taken n. side tree. Circ. 10 ft 1 in at 4 ft. 8 in. (where sample was taken. Tree 80 ft. high and past maturity San Vicente Creek, July 17, 1903 as also the 2 preceding. Santa Cruz Mountains.

No. 90. Quercus densiflora, 2d growth! Trees on this hillside all in 4 circles! Diam. of tree from which sample taken = 9 in. inside bark at 4 ft. ove

Samples sent Sudworth

Sample taken at 4 in. from ground on lower and southerly side. Santa Cruz Mountains. July 17, 1903.

No. 91. Pinus radiata. Monterey Pine. University grounds, by LeConte Oak. Oct. 1903. W.h.g. Taken from main trunk below branches. Tree 50 ft. high and 1½ ft. diam.

No. 92. Quercus agrifolia. Coast Live Oak. Main trunk. At ~~Near~~ Audubon st Entrance See trunk in Museum. Feb. 1904.

No. 93. Arctostaphylos manzanita Parry. Foliage. Vaca Mts, summit; W.h.g., Sept. 15, 1904.

No. 94. Same. Wood. Same data.

No. 95. Tan Oak bark, Santa Lucia Mts., Sept. 19, 1906

tree in bottom of Little Sur, taken from within 1 ft. of ~~bottom~~ base of trunk.

Camera Record.

Spool No. 10, - 1. Dr. C. L. Anderson's home in Santa Cruz. 2, 3, Tan Oak cord wood at San Jacinto Landing, 4. Hazel withes at Santa Cruz Lime Co's Kiln; 5. Redwood barrels made at Santa Cruz Co's Kiln. 6. , 7. Redwood barrel staves. 8. Making staves ~~machine~~. 9. 2d growth, 2 yrs old, 7 ft h., stump diam. 14 ft. 8; sprouts about 35. Head of Little Creek, just ~~on~~ divide from San Vicente. Tree 140 ft. h. 9. Tan Oak cordwood, on ground 2 years, cut in a few weeks after peeling. 10. Douglas Spruce cordwood Big Creek country. 11. Libocedrus with young Yellow Pine. 12. Big-cone Pine, - the two last on San Jacinto Mt, the first on Strawb. Valley, the second on trail to Tanquitz

Spool No. 11. 1. 2. 3. Sugar Pine, lower slopes trail to Tanquitz Peak + all following. 4. Sugar Pine, weather beaten and dying. 5 Sugar Pine on rock (Cupressus in face). 1 to 5 below first summit.

Camera Record.

6. Root system of a Jeffrey Pine, 14 ft. in one direction. 7 Sugar Pine trunk (Abies concolor in background). 8. Jeffrey Pine, smooth-barked red-brown trunk. 9. Chinquapin, Concolor in background. 10. Chinquapin on slopes of Tanquitz. No other shrub. Concolor to left may come in to view. 11. Chinquapin with Concolor rising above it. I notice many small ones end in the Chinquapin clumps. 12. Jeffrey Pine, 2 trees, Concolor to right and left.

Spool No. 12. 1. Limber Pine on San Jacinto Peak. 2. Skirt forest of Limber + Tamarack Pines on San Jacinto Peak. 3 + 4. Tamaracks, San Jacinto. 5. 6. Blue Oak on rock, Laguna Valley road. 7. Foot hills, Laguna Valley, Blue Oak old + new growth. 8. And same with Live Oak. 9. Ceyleum. 10. Same

Camera Record.

as 9 with Lombardy Poplars. 11. Do/10. 12. Burned Gates' mountain, right of Spool No. 13. 1. Buck Lung mt., left of cañon. 2. Bay Laurel fruits. 3. Ceanothus dumosa, Gates Cañon (see also 142.) 4. Valley Oaks in Napa Valley, Napa River with willows in foreground. 5. Solitary roadside Locust. Napa V. 6. Upper Res. Canon, Redwood on one side & Adenostoma Pole with Bay Laurel on opp. 7. Valley Oak in Suisun Valley, 1 mi. west & NW. of Manla's (153½ ft. at 4 ft. and 75 ft. high

Addresses of Southern Californians.

- Miss Olive M. Harrison, Pasadena.
- Prof. E. A. Zumbro, Riverside, Calif.
- Dr. R. E. C. Stearns, 1025 E 18th St., LA.
- Dr. A. G. L. Trew, 146 E. Ave. 56, L. A.
- W. J. Craig, Suite 322, Bullard Bldg, LA.
- Mr. L. A. Greata, Room 85, Temple Block, LA.
- Mr. H. C. DeKker, Burbank, Calif.
- Mr. Fred Reed, Riverside, 547 Chicago.
- Mrs. H. J. Dennison, Nordhoff (Ojai Valley) Box 195.
- Dr. Wallace Lindley, 1414 S. Hope st. Los Ang.
- Dr R. E. C. Stearns, 1025 E. 18th, L. A.
- Frank Thornton, Ranger, Valle Vista, S. Calif.
- C. De Kalb, Mohave (Taken from Journ. N. Y. Bot. Gard. 4, 218.
- Elizabeth Palmer, 407 W. 23 st., L. A.
- H. Rowland Lee, U. S. Geol. Survey (Reno and Los Angeles (Grant Bldg.
- Mr. J. H. Barber, formerly in charge Santa Monica Ontario (S. Calif. Station, U. C.)
- Miss Gertrude E. Tickner, Box 1753, San Pedro.

Addresses of Californians.

- Edward Lilly, Big Creek Power Co, Supt., Santa Cruz.
- J. W. Forgus, Manager of the same, Santa Cruz.
- H. B. Pilkington, Gaurdian of Calif. Redwood Park, Boulder Creek.
- ——. Rogers, Watsonville, all rooms of his house finished in native woods, one in Tan Oak.
- Henry Cowell, Lime and Cement Ernest Cowell, son, S.F., Drum st. Brin Clay Wash. (grad. U.C.).
- Notley Bros., Monterey.
- H. F. Kron, Kron Tanning Co., San Lorenzo Tannery, Santa Cruz.
- Henry Dram, Guide, Big Basin, Boulder Creek.
- Knees, Boat-builder, 3rd St near S.P. Depot. Eucalyptus wood.

- Miss Winifred Paine, Normal School, Chico.
- Miss Georgia Carden, " " "
- Miss Grace Henley, " " "

Addresses of Southern Californians.

- Mr. H.C. Dekker, Burbank.
- Mr. D. Ford, Redlands
- Mr. Robt. Asher, La Mesa.
- Dr. A.G.W. True, Ave. 58, L.A.
- Mr. Ralph S. Kraemer, in charge of Bureau of Forestry in S. Calif.
- Mr. H.B. Ayers, Asst, Bureau For.
- Mr. R.A. Lowe, Idyllwild
- Miss Lamb, Idyllwild
- Mr. Evans, Long Beach H.S.
- Mr. I.P. Lukens, Pasadena.
- Prof. Gaylord, Pasadena.
- Miss Grace Tower, 85 W. Green St. Pasadena.
- Prof. Norton, Pomona College.
- H.W. O'Melveny, Room 19, Baker Block (L.A.)
- Chas. Eaton, Santa Barbara, Eastern millionaire who is planting trees on his S.B. place.

- Hadley, retired business man at Santa Barbara. Similar interests
- J.C. Harvey, 1152 S. Alvarado, L.A. (Author of "Catalogue of Plants in L.A. Bot. Gardens".

Addresses of Californians

- Chas. L. Taylor, Calif. Water & Forest Assn.
- Charlotte M. Hoak, Ashland, Oregon.
- Johnson, C.R., Pres. Union Lumber Co. Ft Bragg.
- Miller, H.A. Union Lumber Co, Manager Store
- Forbes & Son, Mission at (310 ½), S.F.
- W. P. Plummer, Ft. Bragg, Calif.
- Mr. M.S. Baker, 702 Dolores, S.F.
- Mrs. S.S. Montague, Balfax, {Her husband built C.P.R.R. - has forest tract.
- Mr. Hardin Irwin, Kelseyville {interested in local fr.
- Mr. Geo. W. Stewart, U.S. Land Office, Visalia.
- Malcolm Lamont, Chief Gardener, Oakland
- E.E. Leake, Woodland Daily Democrat,
- Hart North, Dept of Commerce, S.F.
- H. Rowland Lee, U.S. Geol. Survey, Soils.

- G. Harold Powell, Pomologist in charge of Fruit-Storage Investigations, Bureau of Plant Industry.

- William Jones, M.P. visited Calif. fall of 1903 invites me to call on him at the House of Commons.
- Georg Ruckenthal, Gymn. of Ft. Bei Coburg, Germany, — Carices!

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